CS6x
CONTROL SYNTHESIZER

CS6R
TONE GENERATOR

OWNER'S MANUAL

YAMAHA

MODULAR SYNTHESIS PLUG-IN SYSTEM

SPECIAL MESSAGE SECTION

PRODUCT SAFETY MARKINGS: Yamaha electronic products may have either labels similar to the graphics shown below or molded/stamped facsimiles of these graphics on the enclosure. The explanation of these graphics appears on this page. Please observe all cautions indicated on this page and those indicated in the safety instruction section.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol, within the equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

IMPORTANT NOTICE: All Yamaha electronic products are tested and approved by an independent safety testing laboratory in order that you may be sure that when it is properly installed and used in its normal and customary manner, all foreseeable risks have been eliminated. DO NOT modify this unit or commission others to do so unless specifically authorized by Yamaha. Product performance and/or safety standards may be diminished. Claims filed under the expressed warranty may be denied if the unit is/has been modified. Implied warranties may also be affected.

SPECIFICATIONS SUBJECT TO CHANGE: The information contained in this manual is believed to be correct at the time of printing. However, Yamaha reserves the right to change or modify any of the specifications without notice or obligation to update existing units.

ENVIRONMENTAL ISSUES: Yamaha strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

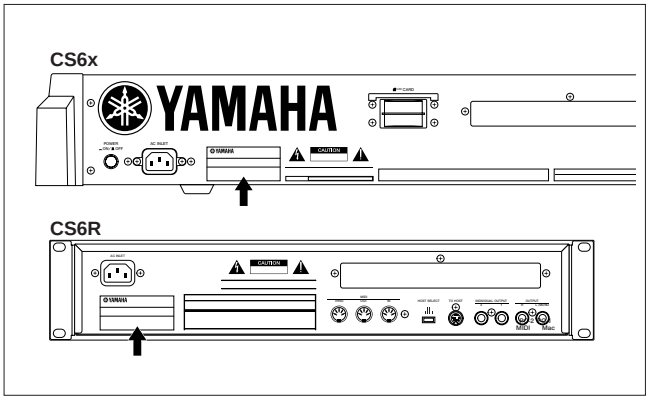
Battery Notice: This product MAY contain a small non-rechargable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

Warning: Do not attempt to recharge, disassemble, or incinerate this type of battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by applicable laws. Note: In some areas, the servicer is required by law to return the defective parts. However, you do have the option of having the servicer dispose of these parts for you.

Disposal Notice: Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc.

NOTICE: Service charges incurred due to lack of knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer’s warranty, and are therefore the owners responsibility. Please study this manual carefully and consult your dealer before requesting service.

NAME PLATE LOCATION: The graphic below indicates the location of the name plate. The model number, serial number, power requirements, etc., are located on this plate. You should record the model number, serial number, and the date of purchase in the spaces provided below and retain this manual as a permanent record of your purchase.



Model _____

Serial No. _____

Purchase Date _____

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

* Please keep these precautions in a safe place for future reference.

⚠ *WARNING*

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

- This instrument contains no user-serviceable parts. Do not attempt to disassemble or modify the internal components in any way.
- Do not expose the instrument to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the instrument, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the instrument inspected by qualified Yamaha service personnel.
- Only use the voltage specified as correct for the instrument. The required voltage is printed on the name plate of the instrument.
- Always connect the three-pin attachment plug to a properly grounded power source. (For more information about the main power supply, see page 12.)
- Before cleaning the instrument, always remove the electric plug from the outlet. Never insert or remove an electric plug with wet hands.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.

⚠ *CAUTION*

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the instrument or other property. These precautions include, but are not limited to, the following:

- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.
- When removing the electric plug from the instrument or an outlet, always hold the plug itself and not the cord. Pulling by the cord can damage it.
- Do not connect the instrument to an electrical outlet using a multiple-connector. Doing so can result in lower sound quality, or possibly cause overheating in the outlet.
- Remove the electric plug from the outlet when the instrument is not to be used for extended periods of time, or during electrical storms.
- Before connecting the instrument to other electronic components, turn off the power for all components. Before turning the power on or off for all components, set all volume levels to minimum. Also, be sure to set the volumes of all components at their minimum levels and gradually raise the volume controls while playing the instrument to set the desired listening level.
- Do not expose the instrument to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel disfiguration or damage to the internal components.
- Do not use the instrument near other electrical products such as televisions, radios, or speakers, since this might cause interference which can affect proper operation of the other products.
- Do not place the instrument in an unstable position where it might accidentally fall over.
- Before moving the instrument, remove all connected cables.
- When cleaning the instrument, use a soft, dry cloth. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths. Also, do not place vinyl, plastic or rubber objects on the instrument, since this might discolor the panel or keyboard.
- Do not rest your weight on, or place heavy objects on the instrument, and do not use excessive force on the buttons, switches or connectors.
- Use only the stand/rack specified for the instrument. When attaching the stand or rack, use the provided screws only. Failure to do so could cause damage to the internal components or result in the instrument falling over.
- Do not operate the instrument for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.

■ REPLACING THE BACKUP BATTERY

- This instrument contains a non rechargeable internal backup battery which permits internal data to remain stored even when the power is off. When the backup battery needs replacing, the message "Change internal battery." will display in the LCD. When this happens, immediately back up your data, then have qualified Yamaha service personnel replace the backup battery.
- Do not attempt to replace the backup battery yourself, in order to prevent the possible serious hazards. Always have qualified Yamaha service personnel replace the backup battery.
- Never place the backup battery in a location that a child can reach, since a child might accidentally swallow the battery. If this should happen, consult a physician immediately.

■ SAVING USER DATA

- Always save data to a Memory Card (SmartMedia) frequently, in order to help prevent the loss of important data due to a malfunction or user operating error.

Yamaha cannot be held responsible for damage caused by improper use or modifications to the instrument, or data that is lost or destroyed.

Always turn the power off when the instrument is not in use.

Introduction

Thank you for purchasing the Yamaha CS6x/CS6R Control Synthesizer.
Your new CS6x/CS6R synthesizer incorporates the highly-acclaimed AWM2 synthesis engine, allowing the creation of super-realistic sounds. It also supports optional Plug-in Boards that provide other synthesis engines of your choice, enabling the production of cutting edge synthesizer sounds.
You can play all these sounds using the synthesizer's automatic playback facilities such as the built-in Arpeggiator and Sequencer. Using the Phrase Clip feature, you can record real sounds or audio from a CD, then play them back across the keyboard as you would a musical instrument.

Other features include Effects, Scenes (for storing sounds created with the Control Knobs on the front panel), and Control Sets (for controlling various sound parameters in real time using different controllers). These features make this synthesizer ideal for every kind of live performance or studio work.
When editing a sound, you can use the [PAGE] knob to switch between screens and five other knobs plus the [DATA] knob for changing parameter values. This makes the process of editing sounds much easier and smoother. To make the most use of your synthesizer, you are encouraged to read through this manual. After reading the manual, please keep it in a convenient and safe place for future reference.

About This Manual

This manual is basically divided into two sections:

■ **Basics Section (Page 6)**
Explains how to get started with the synthesizer, its overall structure, and how to use its main features and functions.

■ **Reference Section (Page 74)**
Explains the parameters in the synthesizer's various Modes.

Package Contents

- Owner's Manual (this book)
- Data List
- AC Power cord
- Memory Card (SmartMedia)
- Burglarproof Lock (Page 171)
- Installation Guide
- CD-ROM (TOOLS for S80 & CS6x/CS6R)

The Included CD-ROM

Application software and Phrase Clip audio files for your synthesizer are included on this CD-ROM. The Voice Editor application lets you edit your synthesizer's sounds through a graphical user interface. The Card Filer application lets you exchange data between your synthesizer and computer. Details are given in the separate Installation Guide or the on-line manuals included with the software.

⚠ Never attempt to play back the track1, in which the application software is located, on an audio CD player. Doing so may result in damage to your hearing as well as to your CD player/audio speakers.

Copying of the commercially available music sequence data and/or digital audio files is strictry prohibited except for your personal use.

The illustrations and LCD screens as shown in this owner's manual are for instructional purposes only, and may appear somewhat different from those on your instrument.

The company names and product names in this Owner's Manual are the trademarks or registered trademarks of their respective companies.

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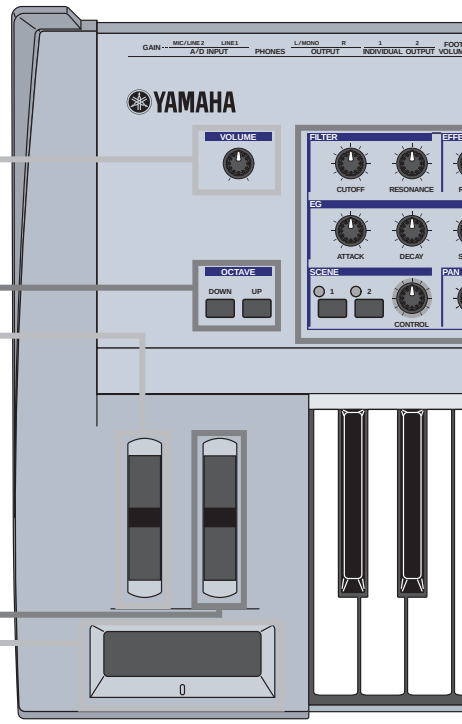
Basics Section

The Controls & Connectors

Front Panel

CS6x



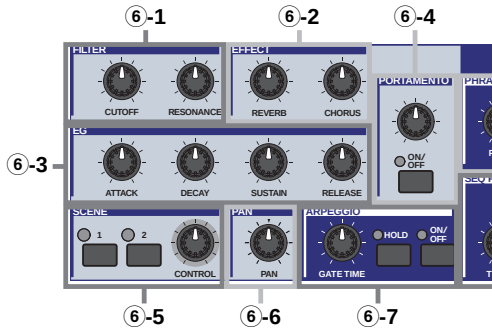
① [VOLUME] Knob (Page 20)
Adjusts the master volume. Turn the knob clockwise to raise the output level from the OUTPUT L/R jacks and the PHONES jack.

② OCTAVE [UP] and [DOWN] keys (Page 28) (CS6x only)
Press either of these keys to shift the note range of the keyboard up or down in octaves. Press them together to returns to the standard range (0).

③ PITCH bend wheel (Page 47) (CS6x only)
Controls the pitch bend effect. You can also assign other functions to this controller.

④ MODULATION wheel (Page 47) (CS6x only)
Controls the modulation effect. You can also assign other parameters functions to this controller.

⑤ Ribbon Controller (Page 48) (CS6x only)
Touch and slide your finger horizontally across the controller's surface to continuously change a specific parameter's value. You can also assign various functions to this controller.



⑥-1 FILTER knobs (Page 40)
These two knobs offer dynamic and real-time tonal changes to a sound.

⑥-2 EFFECT knobs (Page 40)
These knobs respectively control depths(send level) of the Reverb and Chorus effects.

⑥-3 EG knobs (Page 40)
These four knobs control variances in pitch, tone, and volume.

⑥-4 PORTAMENTO controls (Page 59)
This section consists of the PORTAMENTO [ON/OFF] key and a knob for adjusting Portamento Time. With Portamento enabled, there will be a smooth transition in pitch from one note to the next. The Portamento Time is the speed of the transition.

⑥-5 SCENE controls (Page 46)
Pressing either SCENE key ([1] or [2]) to recall the stored knob settings. The LED for the key of the current Scene is lit. The [CONTROL] knob can be used to create a smooth transition between two Scenes. You can also set up the Modulation Wheel or a Foot Controller to like the SCENE [CONTROL] knob (Page 46).

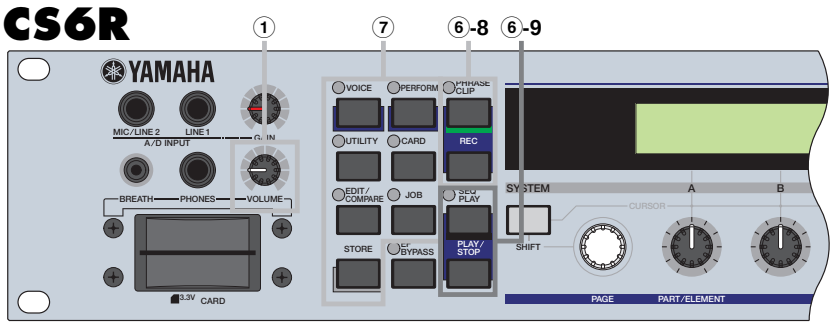
⑥-6 [PAN] knob (Page 59)
Use this knob to adjust the stereo pan position of the current sound (i.e., the sound's position in the stereo image).

⑥ Sound Control knobs (Page 40) (CS6x only)

You can modify the effects and tones in real time using these. There are knobs for Filter Cutoff Frequency and Resonance, the time parameter of the Envelope Generator (EG), and Reverb and Chorus effects. Other controls are related to the Arpeggiator, Portamento, Phrase Clip, and Sequencer.

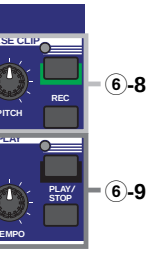
⑦ MODE keys (Page 21)

Press these to keys to select Voice, Performance, Utility or other Modes.
With the CS6R, you can play back (audition) the Voice at note C3 and with a velocity of 127 by pressing the [VOICE] key in Voice Play Mode.
Similarly, in Performance Play Mode, pressing the [PERFORM] key plays back Voices for the Parts (Layer Switch set to "on") at note C3 with a velocity value of 127.



⑥-7 ARPEGGIO controls (Page 42)

Press the [ON/OFF] key to enable or disable the Arpeggiator. The Arpeggiator plays according to the arpeggio settings for each Voice or Performance. Use the [GATE TIME] knob to adjust the playback length of each note in the arpeggio (Page 42). Press the [HOLD] key (its LED will light) to have the Arpeggiator continue playback even after you release the notes. To stop the arpeggio, press the HOLD key again (the LED turn off).



⑥-8 PHRASE CLIP controls (Page 53)

Press the PHRASE CLIP key to enter Phrase Clip Play Mode (the LED will light). Then press the [REC] key to enter Phrase Clip Record Mode. In this Mode, you can record a Phrase Clip (waveform data) using an external microphone, then treat the sound as a musical instrument. The [PITCH] knob changes the Phrase Clip's pitch (or its tempo if the Phrase Clip is rhythmic).
With the CS6R, you can play back (audition) the sound by pressing the PHRASE CLIP key in Phrase Clip Mode at note C3 and with a velocity of 127

⑥-9 SEQ controls (Pages 26, 161)

Press the [SEQ] key to enter Sequence Play Mode. Here, you can play a MIDI file from Memory Card. Use the [PLAY/STOP] key to start or stop playback of the currently selected file. You can use the [TEMPO] knob to adjust the playback speed.

⑧ **LCD (Liquid Crystal Display)**
This is a backlit 2-line display.

⑨ **[SHIFT] key (Page 23)**
In Voice or Performance Play Mode, a screen for viewing or setting the Octave parameter and the MIDI Transmit channel (Page 23) is shown when you press the [SHIFT] key. In any of the Edit Modes, when pressing this key while turning the [PAGE] knob, a menu screen is displayed and you can quickly switch between Edit Mode screens (Page 23). If while holding this key you turn one of Knobs [A] ~ [D], [1] ~ [2], [DATA] knob, or press either [INC/YES] or [DEC/NO] key, you can move the cursor without a parameter value being changed (Page 24).

⑩ **[PAGE] knob (Page 23)**
Switches between screens in each Mode. Each Mode includes several screens.

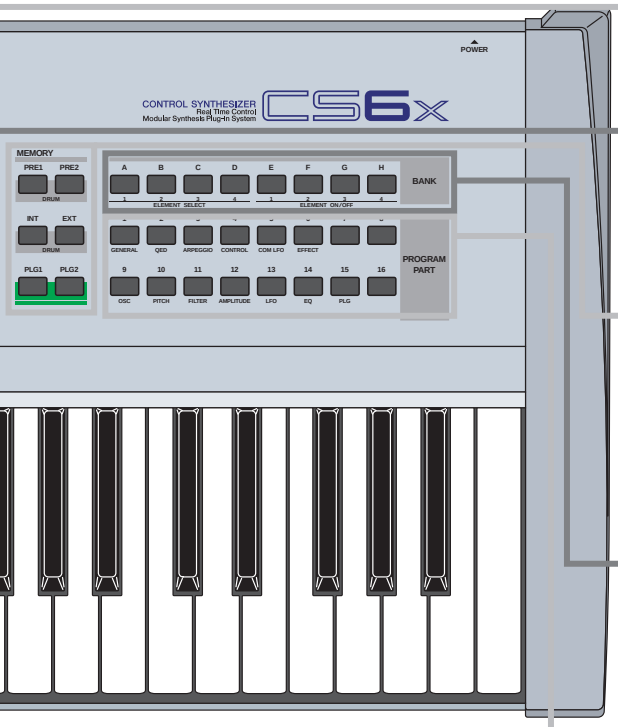
⑪ **Knobs [A], [B], [C], [1] and [2] (Page 24)**
In each Play Mode, these knobs mainly control the functions respectively assigned to them. In each Edit Mode, each knob is used to enter a value for the associated parameter shown in the display. Depending on the operation or the screen you are working in, these knobs will function differently.
Knobs [A] to [C] can be assigned to system control functions (Page 165).
Knobs [1] and [2] can be assigned control functions that affect Voices (Page 84).

⑫ **[DATA] knob (Page 25)**
Use this to increase or decrease the value of the parameter at which the cursor is positioned.

⑬ **[EF BYPASS] key (Page 66)**
Enables/dsiables the Effect Bypass. Press the key (its LED will light) to bypass the effects used with the current Voice or Performance.
The bypassed effects (Reverb, Chorus, or Insertion) are specified in Utility Mode (Page 164).

⑭ **[MASTER KEYBOARD] key (pages 67, 121) (CS6x only)**
The S80 keyboard can work as MIDI master keyboard in Performance mode. When the key is pressed and switched on (the LED will light), the keyboard can play and control multiple MIDI sound modules connected to the S80.

⑮ **[EXIT] key (Page 23)**
The menus and screens of the S80 have a hierarchical structure. Press this key exit from the current screen and return to the previous level in the hierarchy.



⑯ [ENTER] key (Pages 24, 25)

While selecting a Memory or Bank for Voice or Performance, press this key to determine such a memory location. Also, use this key to execute a Job or a Store operation.

⑰ [DEC/NO] key (Page 24)

Use this to decrease the value of the parameter at which the cursor is positioned. Also use it to cancel a Job or a Store operation.

⑱ [INC/YES] key (Page 24)

Use this to increase the value of the parameter at which the cursor is positioned. Also use it to execute a Job or a Store operation.

⑲ MEMORY keys (Pages 27, 29, 75, 119)

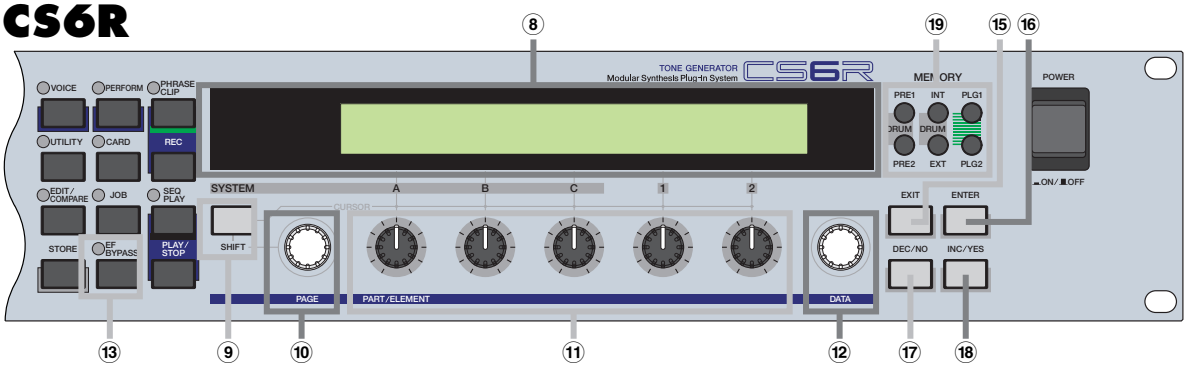
Using one of these keys, you can select a Voice or Performance Memory. Press the [ENTER] key ⑯ to select the Memory. In Performance Mode, the [INT], [EXT], [PLG1] and [PLG2] keys can be used to select the Phrase Clip Part, A/D Part, Plug-in 1 Part and Plug-in 2 Part. The [PRE1] and [PRE2] keys select Common (for all Parts).

⑳ BANK [A] to [H] keys (Pages 75, 119)

Each key selects a Voice or Performance Bank. Each Bank contains sixteen Voices or Performances. In Voice Edit Mode, each of the BANK [A] to [D] keys selects a Voice s Element (ELEMENT SELECT) while each of the BANK [E] to [H] keys turns the associated Voice s Element on or off (ELEMENT ON/OFF). When you activate Master Keyboard Mode by pressing the [MASTER KEYBOARD] key ⑭, these keys can respectively select Zones 1 to 4 if the Master Keyboard Mode setting is 4zone in Performance Edit Mode.

㉑ PROGRAM/PART [1] to [16] keys (Pages 76, 119)

Each key selects a Voice or Performance from the current Bank. In Voice Edit Mode, each PROGRAM/PART key selects an associated edit menu. In Performance Mode, these keys select Parts [1] to [16], respectively.



Rear Panel

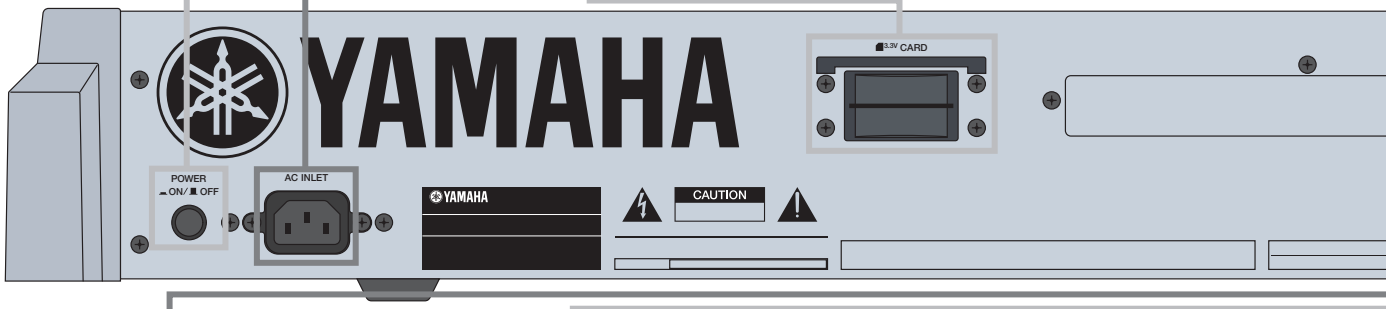
① POWER switch (Page 19)
Use this to switch the synthesizer on or off.

② AC INLET terminal (Page 12)
Plug the female end of the supplied AC power cord in here before plugging it into an AC wall outlet.

③ CARD slot (Page 171)
Insert a Memory Card here to transfer various data to/from the instrument. Read carefully the precautions on use of a Memory Card (Page 171) before using a card.

④ MIDI IN, OUT, and THRU connectors (Page 15)
MIDI IN receives MIDI messages from an external MIDI device. Use this connector to control the synthesizer from an external MIDI device. MIDI OUT sends out MIDI messages generated by the synthesizer, such as notes played on the keyboard or panel control/knob variations, to an external MIDI sound module or device. MIDI THRU just reflects the MIDI messages received at MIDI IN. Connect other MIDI devices here.

CS6x

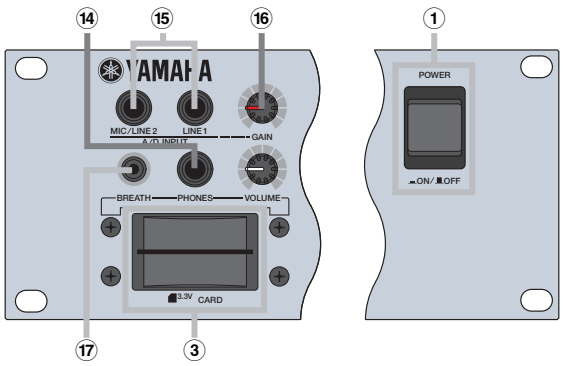


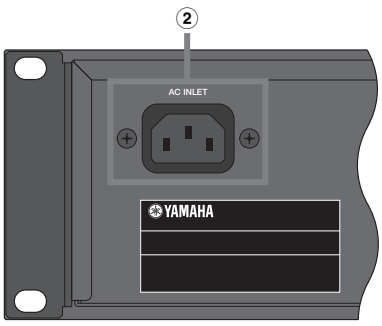
⑩ FOOT CONTROLLER jack (Pages 18, 48) (CS6x only)
An optional foot controller (FC7, etc.) can be connected here. Using the foot controller, you can control tones, pitches, volumes or the like by foot.

⑪ FOOT VOLUME jack (Pages 18, 48) (CS6x only)
An optional foot controller (FC7, etc.) can be connected here. You can control the output level from the instrument by foot. In Utility Mode, you can select Volume or Expression for this controller.

⑫ INDIVIDUAL OUTPUT 1 and 2 jacks (Page 13)
Line level audio signals are output from the synthesizer via these phone jacks (1/4" mono phone plug). The output is separated from that at the OUTPUT L/MONO and R jacks. In Performance Mode, you can specify which Parts can be output from these separate outputs.

CS6R





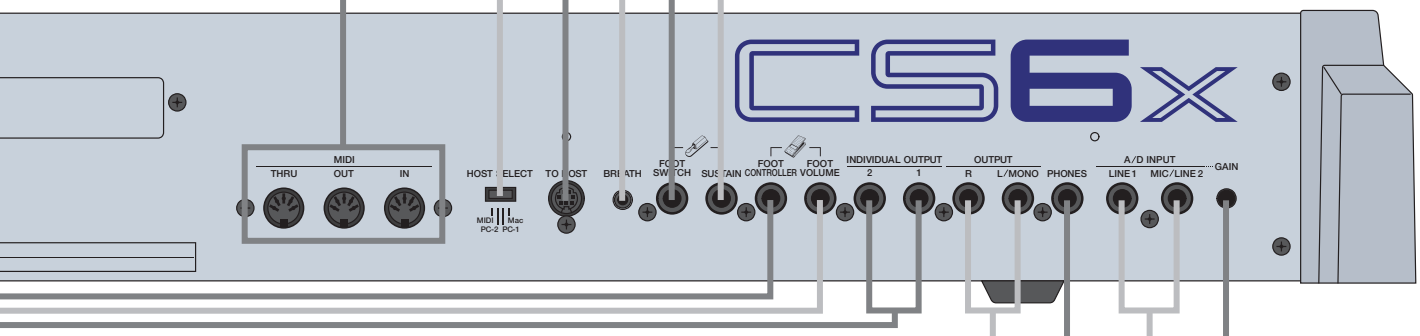
⑤ HOST SELECT switch (Page 16)
Select the type of computer connected to the synthesizer via the TO HOST connector .

⑥ TO HOST terminal
Connect a computer here using an optional serial computer cable (Page 16).

⑦ BREATH jack (Pages 18, 48)
Connect an optional breath controller BC3 here. You can use the Breath Controller to change the output level or tone of the sounds according to the strength of your breath.

⑧ FOOT SWITCH jack (Pages 18, 48)
Connect an optional Foot switch (FC4 or FC5) here. Using the foot switch, you can control of a range of on or off a specific function by foot, as assigned on the instrument. (Pages 53, 165)

⑨ SUSTAIN jack (Pages 18, 48)
An optional Foot Switch (FC4 or FC5) can be connected here. You can use the Foot Switch as a damper pedal on the acoustic piano or for a sustained effect.

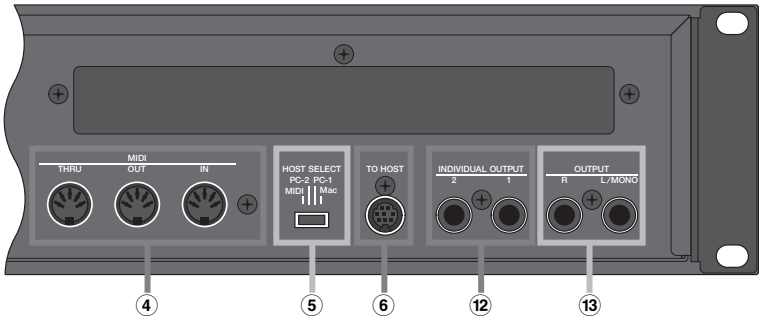


⑬ OUTPUT L/MONO and R jack (Page 13)
Line level audio signals are output via these phone jacks. For monophonic output, use just the L/MONO jack.

⑭ PHONES jack (Page 13)
Connect a pair of headphones here.

⑮ A/D INPUT jacks (Page 14)
External audio signals can be input via these phone jacks. Use these when recording Phrase Clips by connecting a microphone or other audio equipment. To record a monophonic line level signal, you use LINE 1. Use MIC/LINE 2 to record a microphone level signal. To record a stereo line level signal, use both jacks. However, stereo signals are merged into a monophonic signal internally when recording.

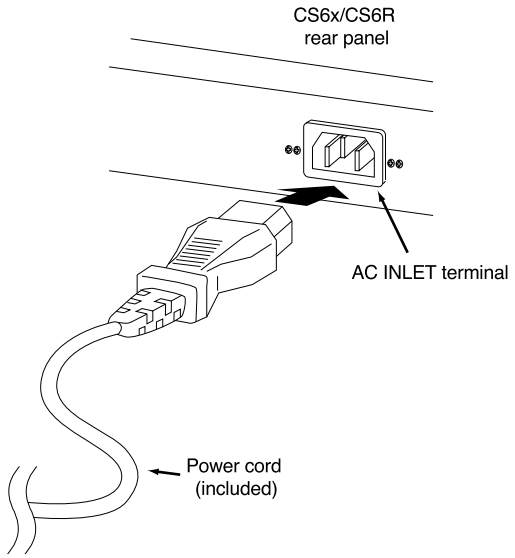
⑯ GAIN knob (Pages 73, 144)
Use this to adjust the input gain of the audio signals at the A/D INPUT jacks. You may need to adjust this depending on the type of device (microphone, other instrument output, etc.) connected when using a A/D Input part.



Before Use

This section explains how to connect to an AC power source, audio and MIDI devices, and a computer system. Only switch the synthesizer on after you have made all the necessary connections.
It is recommended that you read this section before using the synthesizer.

Power Supply



1. Make sure that the instrument's POWER switch is at the OFF position.
2. Connect the supplied power cord to the AC INLET terminal on the instrument's rear panel.
3. Connect the other end of the power cord to an AC outlet. Make sure the synthesizer meets the voltage requirement for the country or region in which it is being used.

⚠ Make sure your CS6x/CS6R is rated for the AC voltage supplied in the area in which it is to be used (as listed on the rear panel). Connecting the unit to the wrong AC supply can cause serious damage to the internal circuitry and may even pose a shock hazard!

⚠ Use only the AC power cord supplied with the CS6x/CS6R. If the supplied cord is lost or damaged and needs to be replaced, contact your Yamaha dealer. The use of an inappropriate replacement can pose a fire and shock hazard!

⚠ The type of AC power cord provided with the CS6x/CS6R may be different depending on the country in which it is purchased (a third prong may be provided for grounding purposes). Improper connection of the grounding conductor can create the risk of electrical shock. Do NOT modify the plug provided with the CS6x/CS6R. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use a plug adapter which defeats the grounding conductor.

Connections

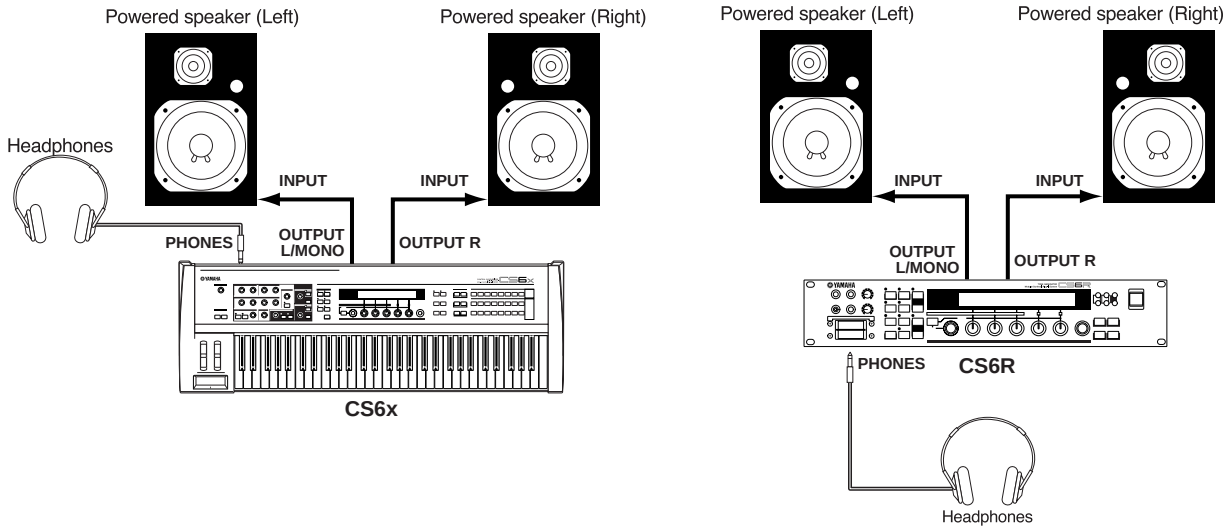
Connecting to External Audio Equipment

Since the synthesizer has no built-in speakers, you need to monitor its sound output via external audio equipment. Alternatively, you could use a pair of headphones.
There are several methods of connecting to external audio equipment, as described in the following illustrations.

NOTE The CS6R also needs an external MIDI controller such as a keyboard, though this is not necessary when using the internal sequencer. For MIDI connections, see the next section.

Connecting Stereo Powered Speakers

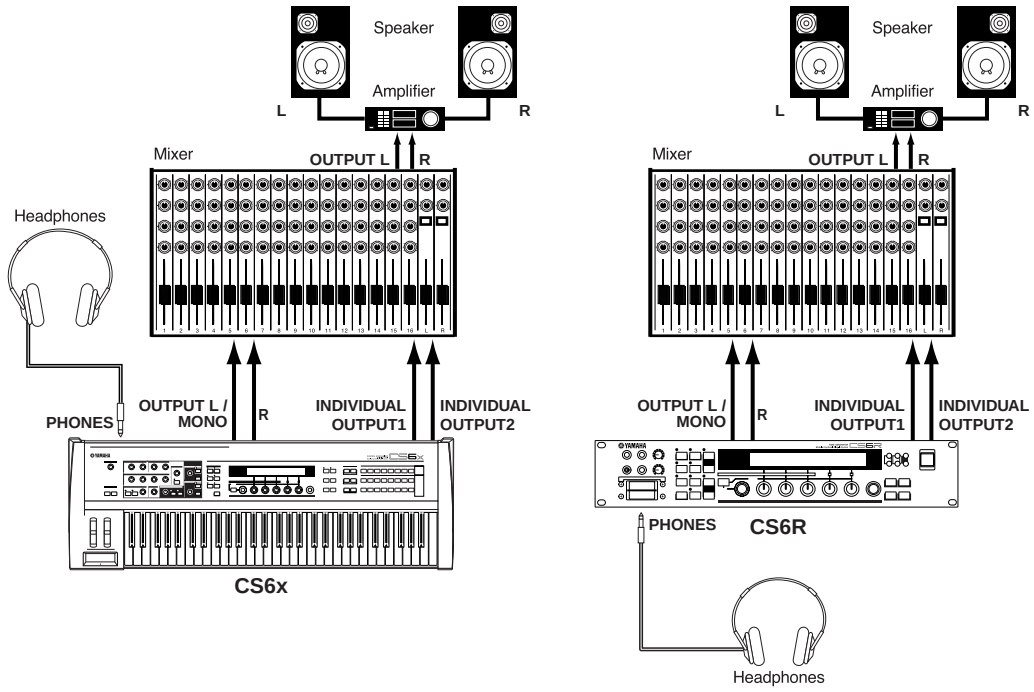
A pair of powered speakers can accurately produce the instrument's rich sounds with their own pan and effect settings. Connect your powered speakers to the OUTPUT L/MONO and R jacks on the rear panel.



NOTE When using just one powered speaker, connect it to the OUTPUT L/MONO jack on the rear panel.

Connecting to a Mixer

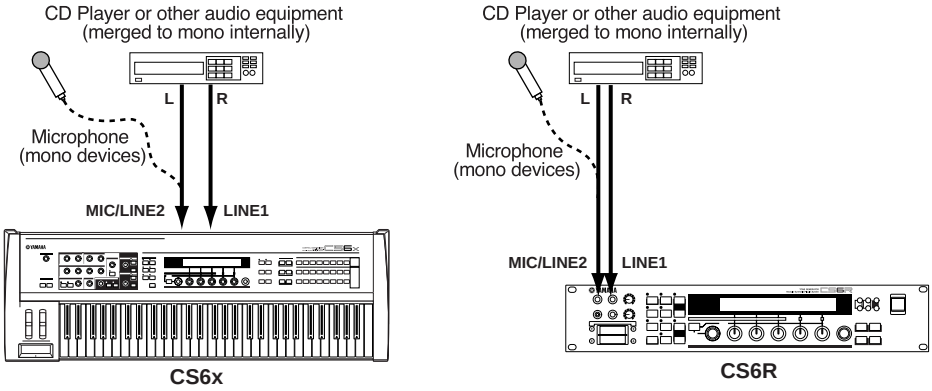
There are extra audio outputs in addition to the OUTPUT (L/MONO and R) jacks. These four outputs can connect to a mixer for separately controlling the outputs of up to four Parts in Performance Mode (Page 117). You can specify the output routing of each Part in Performance Edit Mode (Page 133).



NOTE Connecting a pair of headphones does not affect audio output from the OUTPUT (L/MONO and R) jacks. You can monitor the same sounds via headphones and at the OUTPUT jacks. However, you cannot monitor the sounds from INDIVIDUAL OUTPUT 1 and 2 with headphones.

Connecting a Microphone or Other Audio Equipment

You can record or import external sounds or waveform data and use them as instrument sounds (Phrase Clips, see Page 142). When recording from an external audio source, connect a microphone or the audio source to the A/D INPUT (LINE 1 and MIC/LINE 2) jacks.



NOTE LINE 1 and MIC/LINE 2 can receive monophonic signals. To input a monophonic line level signal to the instrument, use only LINE 1. Use MIC/LINE 2 to input a microphone level signal. When you input stereo line signals, use both jacks. However, these stereo signals are internally merged into a monophonic signal for use in a later process.

NOTE After the above connections are complete, you are ready to set up for recording. When starting a recording, you may need to adjust the input gain of the audio source using the GAIN knob. Details about Phrase Clips, including how to adjust the input gain, are given on Page 142.

⚠ If you choose the wrong type of input source (Pages 130, 144), you may possibly damage your hearing and/or any connected audio equipment. Make sure you set this parameter correctly.

⚠ Before connecting a device to the A/D INPUT jack, always turn the GAIN knob all the way down.

⚠ Do not use both LINE1 and MIC/LINE2 at the same time except for when you want to input stereo line level signals, which will be mixed into a mono signal on the instrument. If you fail to do so, the external device connected may be damaged.

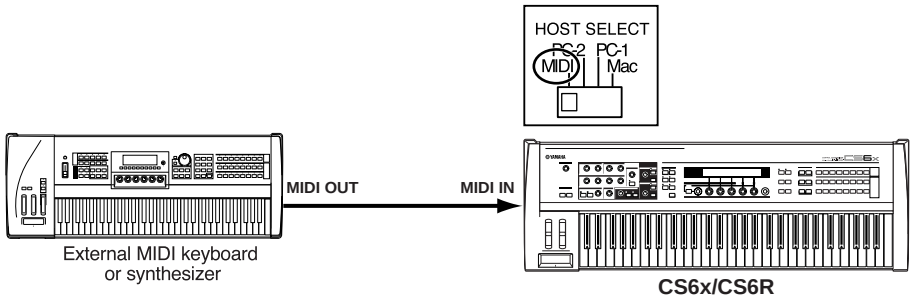
NOTE You can connect an external audio source to the A/D Input Part and use it as a Part in a Performance. Details are given on Pages 73, 130.

Connecting External MIDI Equipment

You can connect an external MIDI device using a MIDI cable (available separately) and control it from this synthesizer. You can also use an external MIDI keyboard or sequencer to control the synthesizer's internal sounds. This section introduces several different applications of MIDI.

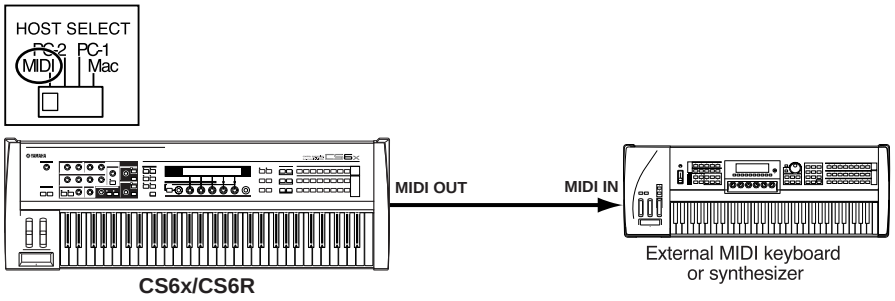
NOTE The HOST SELECT switch on the rear panel should be set to "MIDI." Otherwise, MIDI information will not be transmitted from the synthesizer's MIDI OUT connector.

Controlling from an External MIDI Keyboard

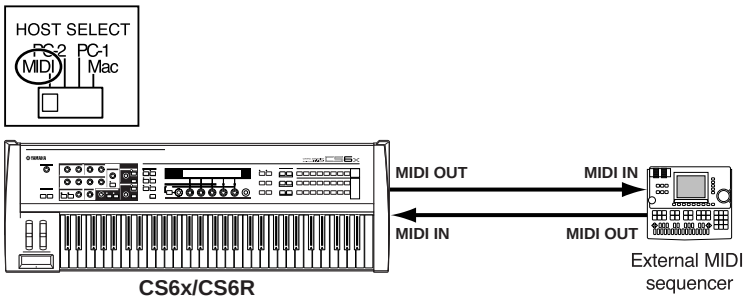


NOTE The CS6R has no built-in keyboard so the above MIDI connection lets you play it in realtime.

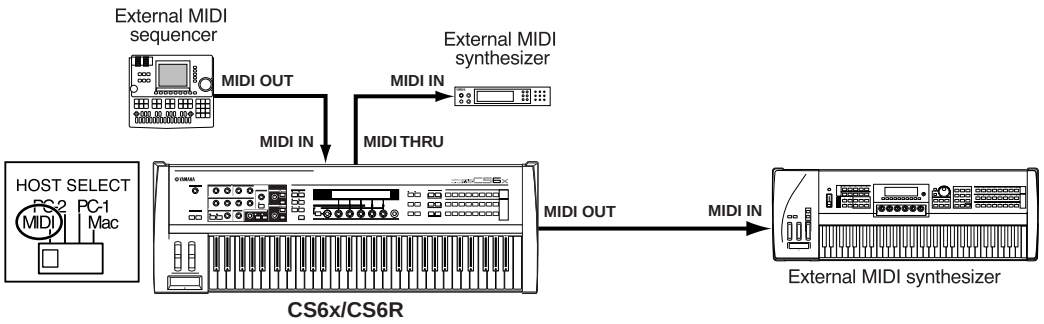
Controlling an External MIDI Keyboard



Recording and Playback using an External MIDI Sequencer



Controlling Another MIDI Device via MIDI THRU



With the above MIDI connections, you can send MIDI data from the MIDI OUT connector while MIDI data from the external sequencer can be sent to an external MIDI synthesizer via the MIDI THRU jack.

NOTE The MIDI cable should be no greater than 15 meters in length, and there should be no more than three devices in a MIDI chain (chained in series via each unit's MIDI THRU). To connect more units, use a MIDI Thru Box for parallel connections. You may encounter errors if the MIDI cables are too long or if too many devices are chained together via their MIDI THRU connectors.

Connecting to a Personal Computer

When a computer is connected, it can be used to control the synthesizer and to transfer synthesizer data to/from computer via MIDI. With the included Voice Editor program, for instance, you can edit the synthesizer's Voices. Using another program – Card Filer – you can transfer files between the computer and the Memory Card inserted in the synthesizer's CARD slot.
There are two ways to connect your synthesizer to a computer:

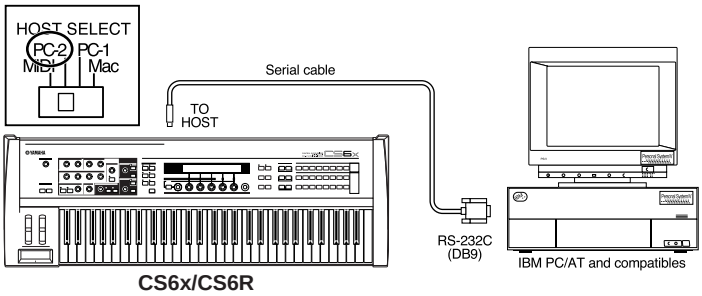
1: Serial connection (the computer's serial port to the synthesizer's TO HOST terminal)

2: MIDI connection (the computer's MIDI interface or external MIDI interface to the synthesizer's MIDI IN and OUT)

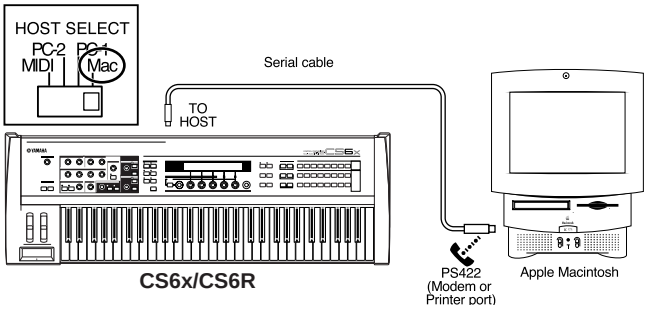
Different computers require different connections, as follows.

1: Serial Port to TO HOST

IBM PC/AT

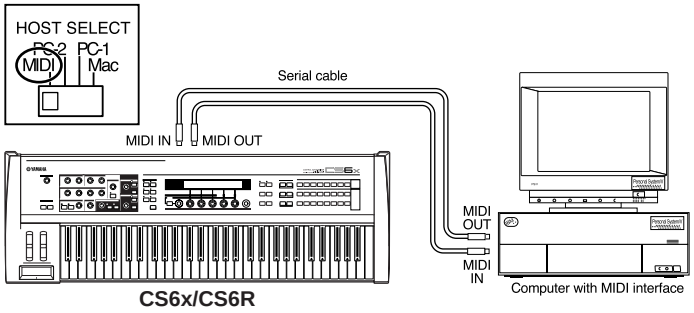


Macintosh

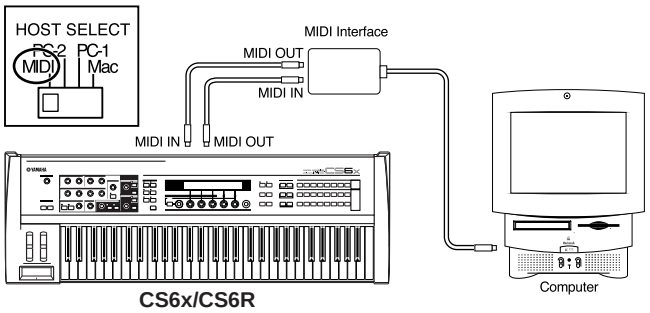


2: MIDI Interface to MIDI IN and OUT

Using the computer's MIDI interface



Using an external MIDI interface

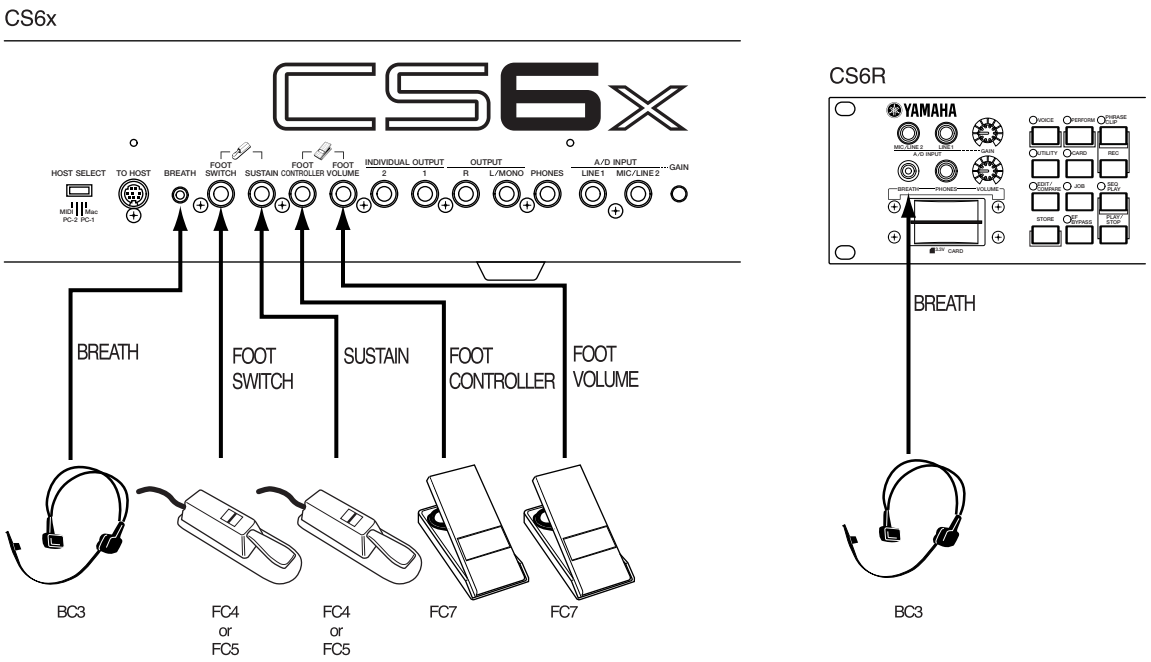


NOTE You will need to an appropriate MIDI application (sequencer, editor, etc.) for your computer platform.

Connecting Various Controllers

The CS6x has several controller jacks on the rear panel, including FOOT SWITCH, SUSTAIN, FOOT CONTROLLER, FOOT VOLUME and BREATH. You can connect optional controllers like a Foot Switch (the FC4 or FC5), Foot Controller (the FC7) and Breath Controller (BC3, etc.) to control tone, volume, pitch and other parameters. The CS6R only has a Breath Controller connector on its front panel, but other controls (equivalent to the CS6x) may be available using external MIDI controllers.

NOTE Details about how to these controllers are given on Page 47.



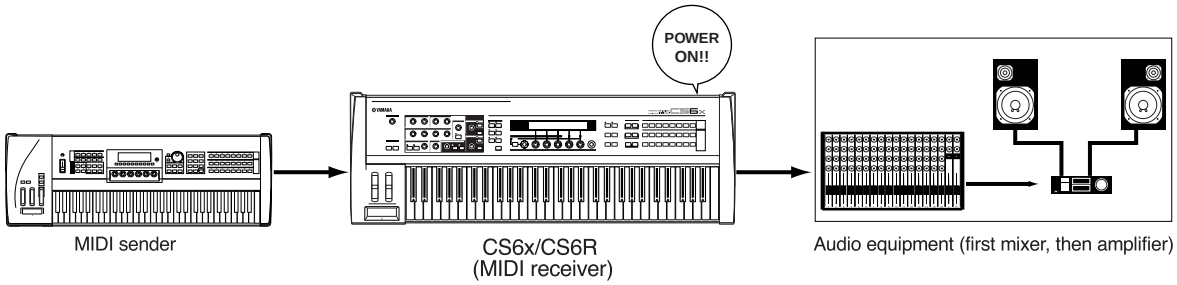
Powering Up

Power-on Procedure

When you have made all the necessary connections between your synthesizer and any other devices, make sure that all volume settings are turned down all the way to zero. Then turn on the every device in your setup in the order of MIDI masters (senders), MIDI slaves (receivers), then audio equipment (mixers, amplifiers, speakers, etc.). This ensures the smooth flow of signals from the first device to the last (first MIDI, then audio).

When powering down the setup, first turn down the volume for each audio devices, then switch off each device in the reverse order (first audio devices, then MIDI).

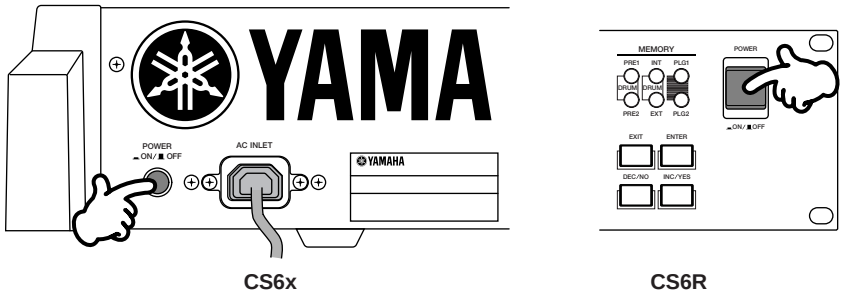
When the CS6x/CS6R as MIDI receiver:



Switching the CS6x/CS6R On

NOTE Before you switch your synthesizer on or off, first turn down the volume of any audio equipment connected to it.

❶Press the POWER switch.



CS6x CS6R

❷A splash screen is displayed briefly.

❸The Voice or Performance Play Mode screen appears next.

```
VCE Play)  PRE1:001(A01)[Sq:Generation]
EQLow-Q EQMid-G  EQHi-G FLT-Rez     HPF
```

If you have a Memory Card inserted in the instrument's CARD slot or an optional Plug-in Board installed, you may see other screens before the Voice or Performance Play Mode screen is displayed.

If a previously used Memory Card is inserted in the CARD slot, you will see a screen while files in EXT Memory are being loaded.

If a new Memory Card (one never used on the instrument) is inserted in the CARD slot, you will see a screen while a basic file is being created in EXT Memory.

If you have a Plug-in Board installed, you will see a screen that confirms the presence of the Plug-in Board.

NOTE The final screen after the power-on sequence may change depending on the Power On Mode setting available Utility Mode (Page 164).

❹ Turn up the amplifier's volume as necessary.

❺ Turn the synthesizer's [VOLUME] knob clockwise to set an appropriate volume level.

About Memory Cards

You can save various kinds of data - Voice, Performance, Phrase Clip, Plug-in, Sequence Chain and so on - onto Memory Card. The built-in CARD slot can accept 3.3-volt Memory Cards (SmartMedia), and there is a Memory Card supplied with this synthesizer.

NOTE Before using a Memory Card, read through precautions on how to handle it (Page 171).

• Formatting a Memory Card

You cannot use a new Memory Card to save files immediately. The card must be formatted in Card Mode (Page 176) beforehand. The Memory Card supplied with the synthesizer is already formatted and contains Demo Song files.

• Saving and Loading Data

You can save various kinds of data as files on a formatted Memory Card. Each file on the card can be loaded when required.
You can save and load data such as System, Voice, Performance, Phrase Clip, Plug-in, Sequence Chain or the like. Since Phrase Clips or Sequence Chain data are held temporarily in the synthesizer's buffer memory and will be lost once you switch it off, you need to save such data onto the Memory Card first.
Details about formatting a Memory Card, saving and loading data, and the recognized file types are given on Page 172.

Basic Operations

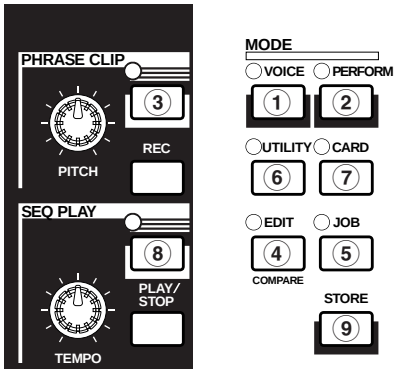
This section gives some basic explanations about operating the synthesizer.

Selecting a Mode

There are several operation Modes — Voice Play Mode, Performance Play Mode, Phrase Clip Mode, etc. — each of which enables you to work efficiently with the synthesizer's various functions.

NOTE An overview of each Mode is given on Page 35.

There are separate Play Modes for Voices, Performances and Phrase Clips. To enter each of these Modes, use the appropriate MODE key ([VOICE] for Voice Play Mode, [PERFORM] for Performance Play Mode). To enter or exit Phrase Clip Mode, press the PHRASE CLIP key. (Note that this key is not found among the MODE keys.)
There are also separate Edit and Job Modes for Voices, Performances and Phrase Clips. To enter Edit or Job Mode, simply press the [EDIT] or [JOB] key while in each respective Play Mode.
Similarly, pressing the [STORE] key in Voice, Performance or Phrase Clip (Play or Edit) Mode takes you into Store Mode where you can store Voices, Performances or Phrase Clips.
Other Modes include Utility Mode where you can specify system settings, Card Mode where you can perform tasks related to the Memory Card, and Sequence Mode where you can play back MIDI song files or create a sequence chain. (Press the [UTILITY] key for Utility Mode, the [CARD] key for Card Mode and the [SEQ] key for Sequence Mode.)



Play Modes

① Voice Play Mode (Page 74)
Press the [VOICE] key (its LED will light) to enter Voice Play Mode. To exit to another Mode, simply press the respective key for that Mode.

```
VCE Play)  PRE1:001(A01)[Sq:Generation]
EQLow-G EQMid-G  EQHi-G FLT-Rez     HPF
```

② Performance Play Mode (Page 117)
Press the [PERFORM] key (its LED will light) to enter Performance Mode. To exit to another Mode, simply press the respective key for that Mode.

```
PFM Play)   INT:001(A01)[--:Init Perf ]
EQLow-G EQMid-G  EQHi-G ------- -------
```

③ Phrase Clip Play Mode (Page 142)
Press the [PHRASE CLIP] key (its LED will light) to enter Phrase Clip Play Mode. To exit to another Mode, simply press the respective key for that Mode. If you press the [REC] key while in Phrase Clip Play Mode, the Record screen in Phrase Clip Mode is displayed.

```
PCLP Play)        1(A01)[--:Init Voice]
EQLow-G EQMid-G  EQHi-G ------- -------
```

Edit Modes

When in each Play Mode, you can swiftly switch to each respective Edit Mode by simply pressing the [EDIT] key (its LED will light).

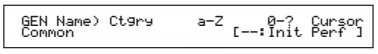
④ Voice Edit Mode (Page 78)
Press the [EDIT] key in Voice Play Mode. To exit to another Mode, simply press the respective key for that Mode or press the [EXIT] key to return to Voice Play Mode.

```
GEN Name) Ctgry     a-Z     0-?  Cursor
C 1234                      [Pf:Init Voice]
```

④ Performance Edit Mode (Page 121)
Press the [EDIT] key while in Performance Play Mode. To exit to another Mode, simply press the respective for that Mode or press the [EXIT] key to return to Performance Play Mode.

```
GEN Name) Ctgry     a-Z     0-?  Cursor
Common                      [--:Init Perf ]
```

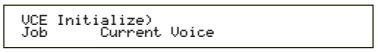
④ **Phrase Clip Edit Mode (Page 146)**
Press the [EDIT] key while in Phrase Clip Play Mode. To exit to another Mode, simply press the respective key for that Mode or press the [EXIT] key to return to Phrase Clip Play Mode.



Job Modes

When in each Play Mode, you can swiftly switch to each respective Job Mode by simply pressing the [JOB] key (its LED will light).

⑤ **Voice Job Mode (Page 115)**
Press the [JOB] key in Voice Play Mode. To exit to another Mode, simply press the respective key for that Mode or press the [EXIT] key to return to Voice Play Mode.



⑤ **Performance Job Mode (Page 140)**
Press the [JOB] key while in Performance Play Mode. To exit to another Mode, simply press the respective for that Mode or press the [EXIT] key to return to Performance Play Mode.

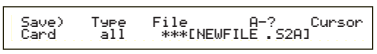
⑤ **Phrase Clip Job Mode (Page 154)**
Press the [JOB] key while in Phrase Clip Play Mode. To exit to another Mode, simply press the respective key for that Mode or press the [EXIT] key to return to Phrase Clip Play Mode.

⑤ **Utility Job Mode (Page 170)**
Press the [JOB] key in Utility Mode. To exit to another Mode, press the respective key for that Mode or press the [EXIT] key to return to Utility Mode.

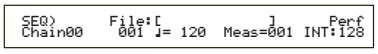
Other Modes

⑥ **Utility Mode (Page 163)**
Press the [UTILITY] key (its LED will light) to enter Utility Mode. To exit to another Mode, simply press the respective key for that Mode.

⑦ **Card Mode (Page 171)**
Press the [CARD] key (its LED will light) to enter Card Mode. To exit to another Mode, simply press the respective key for that Mode.

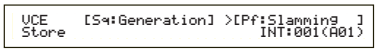


⑧ **Sequence Play Mode (Page 161)**
Press the SEQ key (its LED will light) to enter Sequence Play Mode. To exit to another Mode, simply press the respective key for that Mode.



NOTE When MIDI system exclusive messages are received from an external MIDI device, the LED for the currently selected Play Mode (VOICE, PERFORM or PHRASE CLIP) will blink.

⑨ **Store Modes (Pages 116, 141, 160)**
When in each Play or Edit Mode, you can swiftly switch to each respective Store Mode by simply pressing the [STORE] key. To exit to another Mode, simply press the respective key for that Mode or press the [EXIT] key to return to Play Mode.



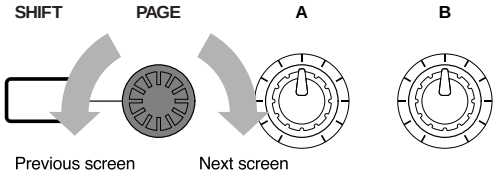
NOTE Another storage way of Voice, Performance and Phrase Clip is to memorize these settings as Scene 1 and 2. See Page 45 for more information (CS6x only).

Selecting a Screen

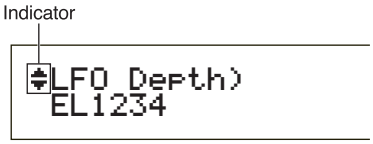
You can switch between screens using the [PAGE] knob and pressing [SHIFT], PROGRAM/PART, [EXIT] and [ENTER] keys.

[PAGE] Knob

Usually, there are several screens and sub-screens in each Mode. Use the [PAGE] knob to switch between screens.

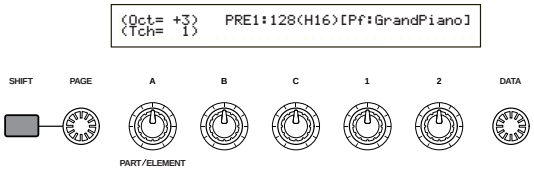


As shown below, the "▲▼" indicator is displayed to the left of the screen if there are more screens before and after that which you are currently viewing.
At the first in a series of screens, you will see the "▼" indicator meaning that there are more screens to follow, but none before it. At the last screen, you will see the "▲" indicator meaning that there are no more screens to follow.

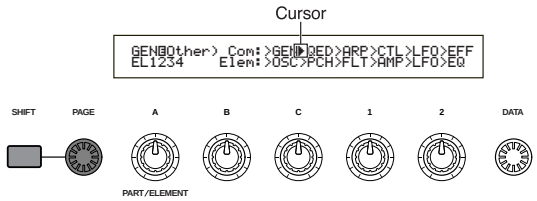


[SHIFT] Key

If you hold down the [SHIFT] key in Voice Play Mode, you can modify the parameters on screen as follows.



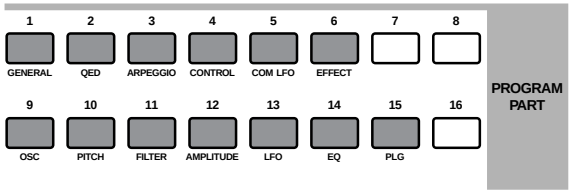
Some Modes have more screens. In this case, you can use the [PAGE] knob while holding down the [SHIFT] key to switch to a specific screen.
For example, if you use the [PAGE] knob while holding down the [SHIFT] key in Voice Edit Mode, the following screen is shown. Select a specific item using the cursor (▶), then release the [SHIFT] key to switch to the parameter screen for that item.



NOTE The [SHIFT] key also has other functions, as described in other sections in this manual.

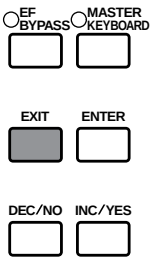
PROGRAM/PART keys

With the CS6x, in Voice Edit Mode, PROGRAM/PART keys can be used to select the items shown under the keys and to switch to their screens.


1 2 3 4 5 6 7 8
GENERAL QED ARPEGGIO CONTROL COM LFO EFFECT
9 10 11 12 13 14 15 16
OSC PITCH FILTER AMPLITUDE LFO EQ PLG
PROGRAM PART

[EXIT] Key

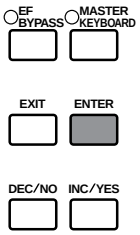
Press the [EXIT] key to move up (exit) in the hierarchical structure and return to the previous screen.

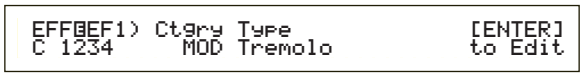


NOTE The [EXIT] key also has other more functions, as described in other sections in this manual.

[ENTER] Key

Normally, the [ENTER] key is used to apply parameter settings. In some cases, however, the following screen appears prompting you to press the [ENTER] key.





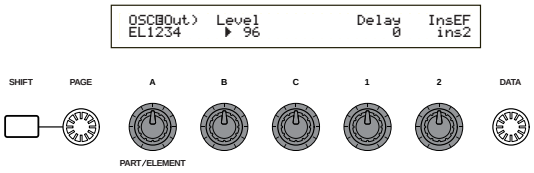
NOTE The [ENTER] key has other functions, as described in other sections in this manual.

Entering Data

You can use the knobs to directly alter their respective parameters on the screen. Alternatively, you can also move the cursor (▶) to a parameter and set its value using the [INC/YES] and [DEC/NO] keys, or the [DATA] knob.

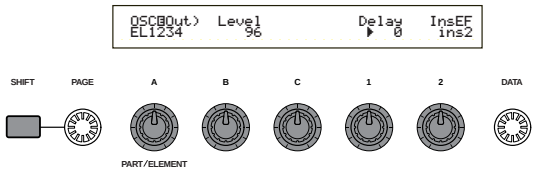
Knobs [A], [B], [C], [1] and [2]

Each parameter in a screen is normally associated with a knob ([A], [B], [C], [1] or [2]) below the display. When you use one of these knobs, the cursor (▶) moves to its respective parameter and you can change its value. For instance, you can use Knob [B] at the following screen to change the Level setting. Turn the knob clockwise to increase the value and anti-clockwise to decrease it.



Moving the Cursor

By using a knob ([A], [B], [C], [1] or [2]) while holding down the [SHIFT] key, you can move the cursor (▶) to the respective parameter on the screen without affecting its value.



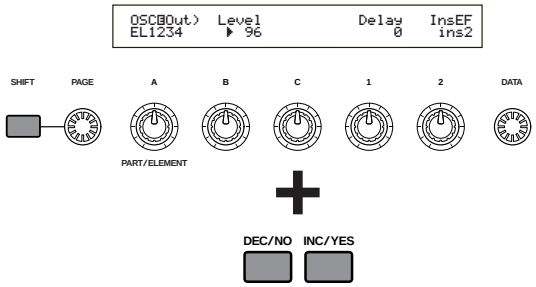
[INC/YES] and [DEC/NO] Keys

You can use the [INC/YES] key to increment a parameter setting by one step, or the [DEC/NO] key to decrement it. If you hold down either key, the value is continuously changed.

You can also use these keys to answer "YES" or "NO" when a confirmation message is displayed.

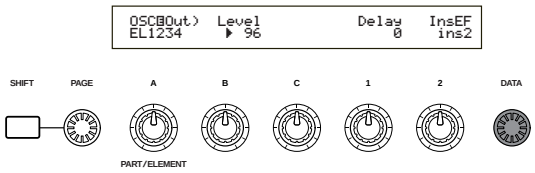
Moving the Cursor

By pressing the [INC/YES] or [DEC/NO] key while holding down the [SHIFT] key, you can move the cursor between parameters on the screen without affecting their values.



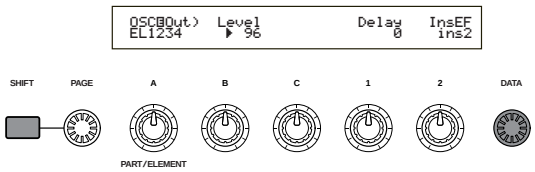
[DATA] Knob

Use this knob to change the value of the parameter at which the cursor is positioned. Turn the knob clockwise to increment the value one click (step) at a time, or turn it anti-clockwise decrement it.



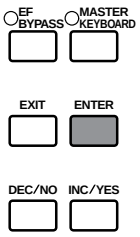
Moving the Cursor

Turn the [DATA] knob clockwise or anti-clockwise while holding down the [SHIFT] key to move the cursor to a parameter in the screen without affecting its value.



[ENTER] Key

Use this key to apply a setting (when it is blinking, for example). The [ENTER] key is also used when executing a Job or Store operation, as described in other sections of this manual.

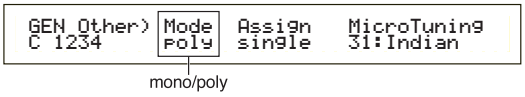


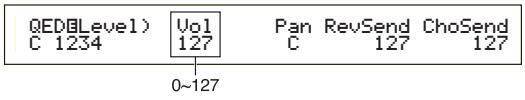
Types of Parameters (Absolute and Relative)

There are many ways to set parameters. Some parameters require you to directly enter numerical settings or alphabetic characters. With others, you can choose from a number of available settings. Furthermore, some types of parameters are "absolute" whereas others are "relative."

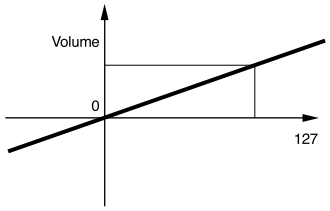
For example, the absolute parameter in the following illustration can be set to either "mono" or "poly." For other absolute parameters such as Volume, the setting can be any value between zero and 127. The Volume setting has a linear, one-to-one relationship with the actual volume, as shown in the graph on the left.

However, relative parameters do not follow the same relationship. The graph on the bottom shows the role of the Velocity Offset parameter. The value you have set here, known as an "offset," is added to, or subtracted from, the actual value. With Velocity Offset, the specified offset value is added to, or subtracted from, the actual velocity of the notes you play on the keyboard. Sometimes, these types of relative parameters are set as a percentage.

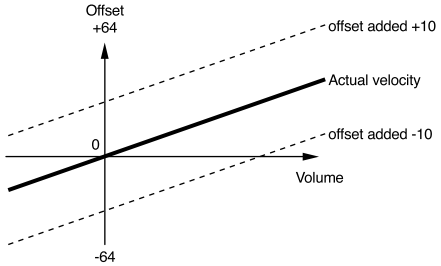




① Volume (absolute)



② Velocity offset (relative)



Demo Playback

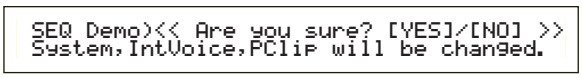
Several demo songs are supplied with this synthesizer. You can play them back as follows.

NOTE Make sure synthesizer is ready for playback. Details are given in the section “Before Use” on Page 12.

NOTE At the “SEQ Demo” screen, any data in the instrument’s internal memory (System, Internal Voices, Phrase Clip or the like) will be overwritten by the data for the demo song. Important data should be saved to Memory Card (Page 171) beforehand.

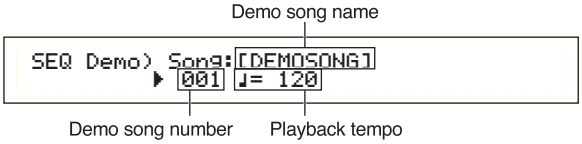
NOTE There are other demo song files provided on the included Memory Card. You can play them back in a normal Sequence Play operation after you load “all” data file from the Card (Page 174). Refer to page 162 for details.

❶Press the SEQ PLAY key to enter Sequence Play Mode. You will see the following screen.



NOTE There are two screens in Sequence Play Mode. Use the [PAGE] knob to switch to the screen shown above.

❷Press the [INC/YES] key to enter the SEQ Demo screen.



NOTE To cancel demo playback, press the [DEC/NO] key.

❸Press the [PLAY/STOP] key to start playback of the song.

❹Press the [PLAY/STOP] key again to stop playback.

NOTE At the end of the song, playback is automatically looped back to the beginning.

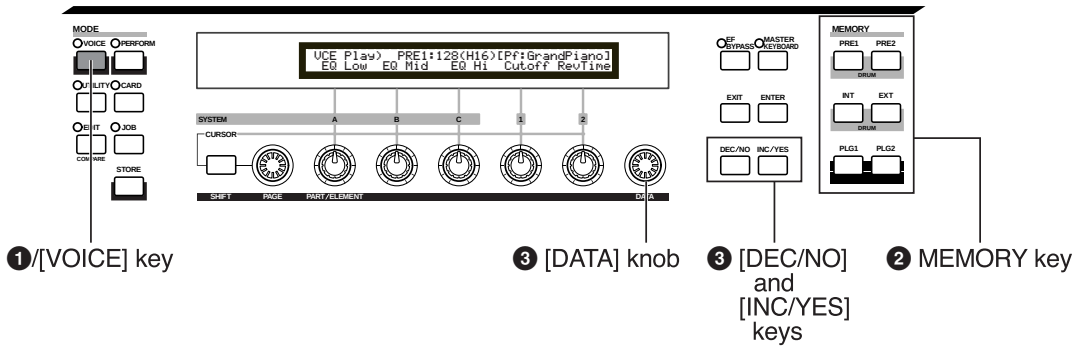
NOTE You can change the playback tempo using the [TEMPO] knob or Knob [C]. To use the song’s original tempo, select a tempo value of “***.”

NOTE Details about Sequence Play Mode (and demo playback from Memory Card), are given on Page 161.

Voices and Performances

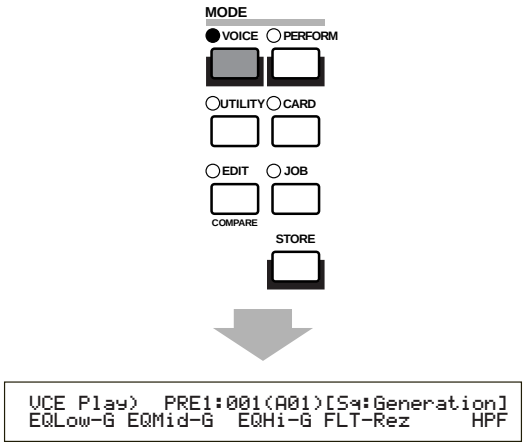
Playing a Voice

Based on an AWM2 synthesis engine, this synthesizer offers various kinds of preset Voices (256 Normal Voices and 8 Drum Voices). You can also create your original Voices and store them into the instrument's internal memory (INT) or an external Memory Card (EXT). The internal and external memory can each contain up to 128 Normal Voices and 2 Drum Voices. You can freely select and play Voices from both groups of memories, as explained in the following.



❶ Press the [VOICE] key

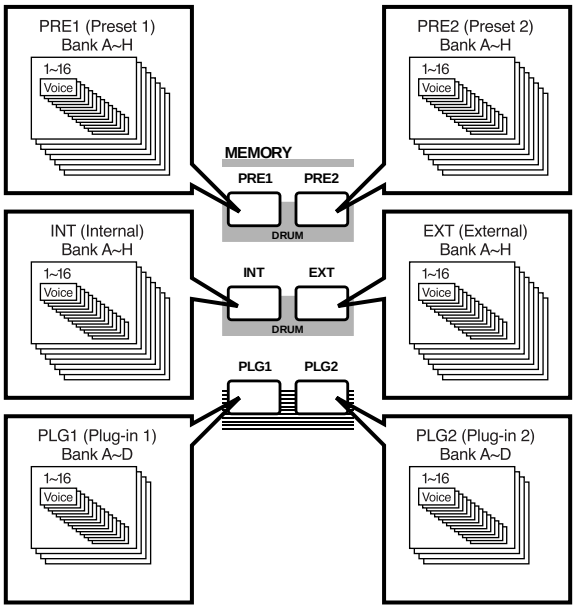
The [VOICE] key LED will light, showing that you are now in Voice Play Mode. The following appears in the display.



At this point, you can play the Voice (named on the screen) via keyboard.

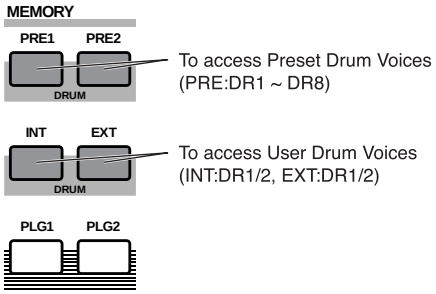
❷ Press a MEMORY key to select a Voice Memory

There are six Voice Memories: PRE1 (Preset 1), PRE2 (Preset 2), INT (Internal), EXT (External), PLG1 (Plug-in 1), and PLG2 (Plug-in 2). Within each Voice Memory are several Banks (up to eight, A to H) in which the Voices are stored. The following illustration shows how Voices are stored in a Voice Memory.



The Drum Voices are held in separate areas of each Memory, and are accessed as follows.

- **To access the Preset Drum Memories (PRE:DR1 ~ DR8):**
  Press the MEMORY [PRE2] key while holding down the MEMORY [PRE1] key.
- **To access the User Drum Memories (INT:DR1/2, EXT:DR1/2):**
  Press the MEMORY [EXT] key while holding down the MEMORY [INT] key.

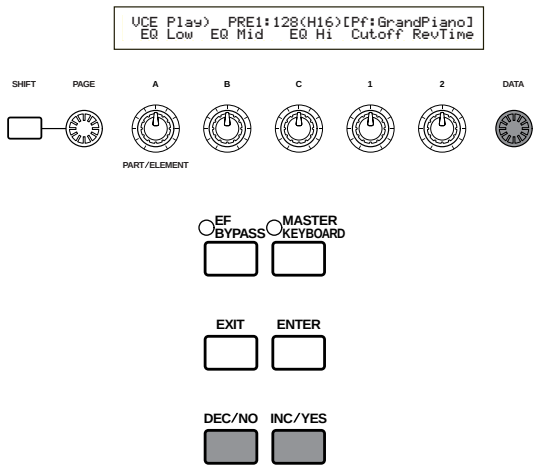


NOTE PRE1 and PRE2 (Preset 1 and 2) are stored in internal Read Only Memory (ROM) and contain preset Voices which are never overwritten. INT (internal) is stored in Random Access Memory (RAM) and contains the factory default Voices. These can be overwritten, but can be recalled from the original factory settings at any time if required.

NOTE EXT (external) is stored on a Memory Card inserted in the CARD slot. If there is no Memory Card inserted and you attempt to select an EXT Voice, "----" will be displayed and no sound will be produced. With a Memory Card inserted, you can select and play EXT Voices. PLG1 or PLG2 Voices can only be selected if a Plug-in Board is installed.

❸ Select a Voice Number using the [DATA] knob or the [INC/YES] and [DEC/NO] keys

Turn the [DATA] knob clockwise or press the [INC/YES] key to increment the Voice Number. Turn it anti-clockwise or press the [DEC/NO] key to decrement the Voice Number.



Now you can play a selected Voice when you play the keyboard on the CS6x or the external keyboard connected to the CS6R. Try auditioning other Voices.

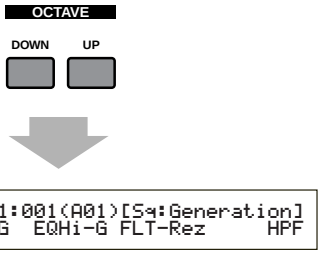
NOTE Details about selecting Voices using the [DATA] knob or the [DEC/NO] and [INC/YES] keys are given on Page 76.

NOTE You can also select Voices using a combination of BANK and PROGRAM/PART keys (CS6x), or using the Category Search feature. Details about selecting Voices are given on Page 75.

Octave Shifting (CS6x only)

If you need to raise or lower the keyboard note range for the Voice, you can use the OCTAVE [UP] key to raise the range by an octave and the OCTAVE [DOWN] key to lower it by an octave. You can shift the note range by up to three octaves in either direction. The current octave setting is shown in the left corner of the display while the OCTAVE [UP] or [DOWN] key is being held down.
For instance, if you press the OCTAVE [UP] key twice (+2), you will actually play note C5 by pressing note C3 on the keyboard (i.e., the note you play is shifted up two octaves). To return to the standard octave range (0), press the OCTAVE [UP] and [DOWN] keys simultaneously.

NOTE You can have the current octave setting shown in the display while holding down the [SHIFT] key. Use this feature for confirmation.



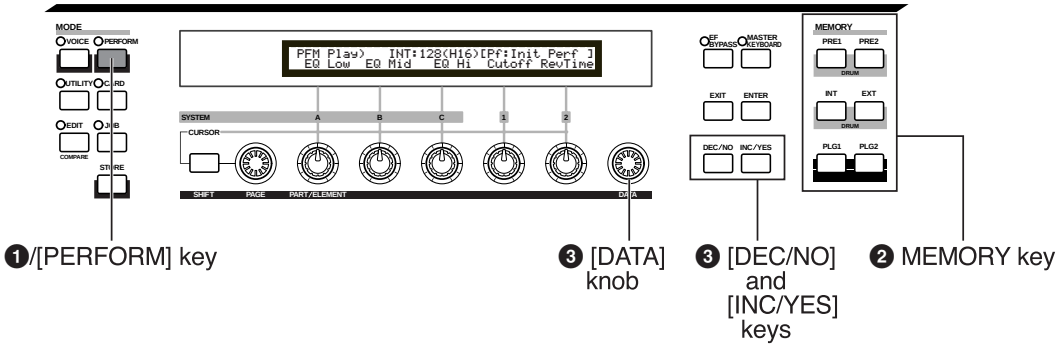
NOTE If a note is shifted beyond G8 (MIDI note number 127), it will automatically be shifted to the octave below. For instance, note G#8 will be played as G#7.

NOTE OCTAVE [UP] and [DOWN] keys are linked to the "Coarse/Fine" parameter (Page 90) in the PCH Tune screen of Voice Edit Mode, and also the "Oct" parameter (Page 163) in the MSTR Kbd screen of Utility Mode. The OCTAVE [UP] and [DOWN] keys may not function if these parameters also have been set to shift the range.

NOTE You can also use the OCTAVE [UP] and [DOWN] keys in Performance Play Mode.

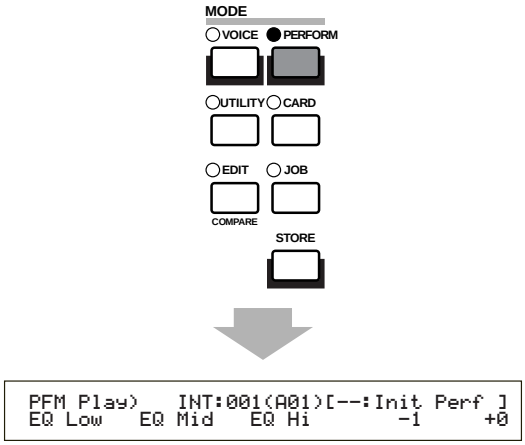
Playing a Performance

In Performance Play Mode, you can select and play any of 128 internal and 64 external (Memory Card) Performances.
A Performance is a set of Voices used with the built-in (or an external) sequencer. Performances also let you set the synthesizer up for multitimbral operation.
Each Performance can contain up to 16 Parts assigned to different Voices, plus extra Parts for Phrase Clip, A/D INPUT and Plug-in Boards. If the Layer Switch (Page 133) parameter is switched on for any Parts, those Parts can be play in unison. Also, you can assign multiple Parts to different MIDI channels so that they can be played or be controlled individually using the built-in (or an external) sequencer. Up to 128 Performances can be stored in the internal memory and up to 64 on Memory Card. These Performance settings are available in Performance Edit Mode (Page 121). Here, we will show how to get started with Performance Play after selecting a Performance.



❶ Press the [PERFORM] key

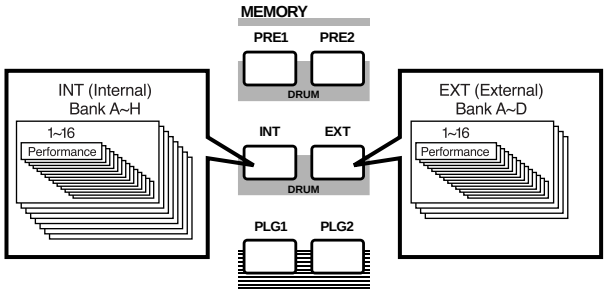
The [PERFORM] key LED will light, showing that you are now in Performance Play Mode. The following appears in the display.



At this point, you can play the Performance (named on the screen) via keyboard.

❷ Press a MEMORY key to select a Performance Memory

There are two Performance Memories: INT (internal) and EXT (External). The INT memory is divided into eight Banks (A to H) of 8 Performances. The EXT memory is divided into four Banks (A to D) of 4 Performances.

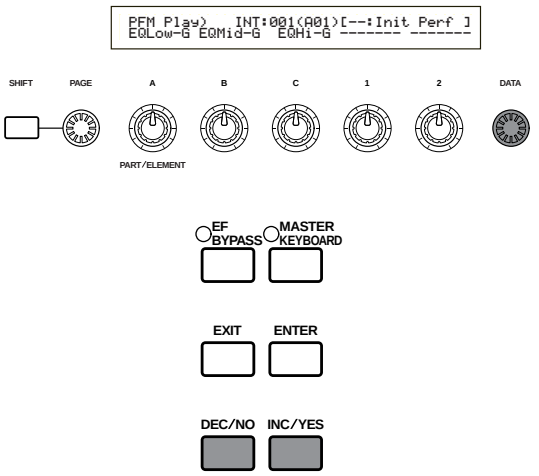


NOTE INT (internal) is stored in internal Random Access Memory (RAM) and contains factory default Performances. These can be overwritten but can recalled at any time.

NOTE EXT (external) is stored on a Memory Card (RAM) inserted in the CARD slot. If there is no Memory Card inserted and you attempt to select an EXT Performance, "-----" will be displayed and no sound will be produced. With a Memory Card inserted, you can select and play EXT Performances.

❸ Select a Performance Number using the [DATA] knob or the [INC/YES] and [DEC/NO] keys

Turn the [DATA] knob clockwise or press the [INC/YES] key to increment the Performance Number. Turn it anti-clockwise or press the [DEC/NO] key to decrement the Performance Number.



You can now play Parts in the Performance via the keyboard. If the Layer Switch parameter is switched on for any Parts, those Parts can be play in unison. Now try selecting other Performances.

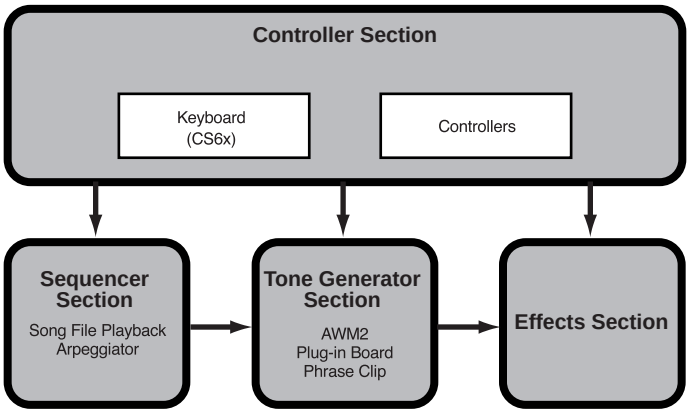
NOTE Details about selecting Performances using the [DATA] knob or the [DEC/NO] and [INC/YES] keys are given on Page 76.

NOTE You can also select Performances using a combination of BANK and PROGRAM/PART keys (CS6x), or using the Category Search feature. Details about selecting Performances are given on Page 119.

NOTE On selection, a Performance may take a few seconds to become ready since the settings for multiple Parts are applied.

An Overview of the CS6x/CS6R

In this section, an overview of the many features of the CS6x/CS6R is given.
The CS6x/CS6R hardware is made up of a number of sections, as shown in the following diagram.



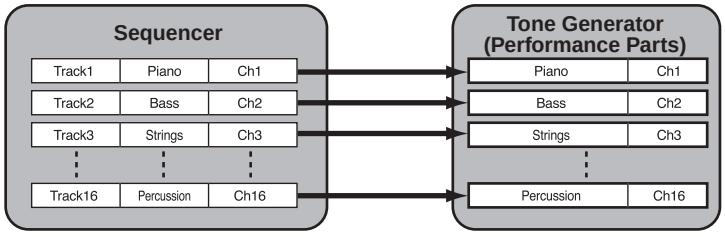
Controller Section

This section consists of the keyboard, Pitch Bend and Modulation Wheels, Ribbon Controller, Sound Control Knobs, and so on. The keyboard itself doesn't generate sounds, but instead sends note, velocity and other information to the synthesizer's tone generator section when you plays notes. The controllers also send changes. Information from the keyboard and controllers can be transmitted to other external MIDI devices through the MIDI OUT connector.

NOTE The CS6R has no keyboard, Pitch Bend or Modulation Wheels, Ribbon Controller or Sound Control Knobs.

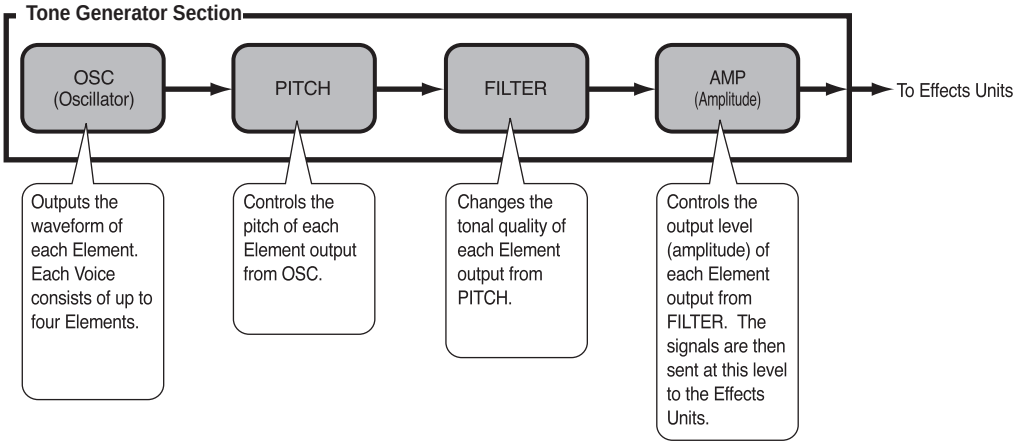
Sequencer Section

This section can be used to play back Standard MIDI Files held on Memory Card. The contents of Tracks 1 to 16 correspond to MIDI channels and Parts in a Performance as shown in the following illustration. The sequencer can play back songs with a different Voice assigned to each Part.



Tone Generator Section

This section plays back sounds according to information received from the keyboard and controllers. The following example illustrates the path taken by the signal from an Element in Voice Mode.


Tone Generator Section
OSC (Oscillator)
PITCH
FILTER
AMP (Amplitude)
To Effects Units
Outputs the waveform of each Element. Each Voice consists of up to four Elements.
Controls the pitch of each Element output from OSC.
Changes the tonal quality of each Element output from PITCH.
Controls the output level (amplitude) of each Element output from FILTER. The signals are then sent at this level to the Effects Units.

About the Tone Generator

The tone generator section in the CS6x/CS6R consists of AWM2, Phrase Clip and Plug-in units.

AWM2 (Advanced Wave Memory 2) is a synthesis system based on the use of sampled waveforms, and is used in many Yamaha synthesizers. For extra realism, each AWM2 Voice uses multiple samples of a real instrument's waveform. Furthermore, a wide variety of envelope generator, filter, modulation, and other parameters can be applied to the basic waveform.

NOTE AWM2 is not just limited to general musical instruments (Normal Voices). It can also be used for setting up percussive instruments (Drum Voices). Details about Normal and Drum Voices are given on Page 37.

Phrase Clips are sounds recorded via microphone or from external audio equipment, or sounds loaded directly via Memory Card. These are then stored in internal RAM and can be played back as musical sounds. They can be edited and easily set up for use as rhythm loops, percussion/drum sounds and sound effect.

Plug-in Boards add more features to the system. When installed, they combine perfectly with the synthesizer's built-in tone generator section.

The following types of Plug-in Board are available, and up to two boards can be installed in the synthesizer. These boards are not simply a source of more Voices; they are also tone generators in their own right and extend the system-level specifications such as maximum polyphony. You can play Plug-in Voices just like ordinary internal Voices and use them as Parts in a Performance (Page 108).

This synthesizer is compatible with the Modular Synthesis Plug-in System (see next page). There are three types of Modular Synthesis Plug-in System-compatible Plug-in Boards: Single Part, Multi-Part and Effect Plug-in Board. Using these, you can build your own system based on the sounds you require.

Single Part Plug-in Boards

- **Analog Physical Modeling Plug-in Board (PLG150-AN)**
  Using Analog Physical Modeling (AN) synthesis, the very latest digital technology is used to accurately reproduce the sound of analog synthesizers. With this board installed, you have real-time control over the playback of vintage synthesizer sounds as well as the very latest sounds heard in today's club-oriented music.

- **Piano Plug-in Board (PLG150-PF)**
  A massive 16MB of waveform memory is dedicated to the reproduction of piano sounds using AWM2 synthesis. This board offers 136 stereo sounds, including a number of acoustic and electric pianos, and up to 64-note polyphony. You can even install two of these boards to double the polyphony to 128 notes.

- **Advanced DX/TX Plug-in Board (PLG150-DX)**
  The sounds of the DX7 are available on this Plug-in Board. Unlike with PCM-based solutions, this does not use sampled waveforms. Instead, it uses the actual FM sound generator engine of the DX-series synthesizers to give a completely faithful reproduction. Sounds are compatible with those of the DX7, and the board can even receive DX7 data via MIDI bulk dump.

- **Virtual Acoustic Plug-in Board (PLG150-VL)**
  With Virtual Acoustic (VA) synthesis, the sounds of real instruments are modeled (simulated) in real time, giving a degree of realism that cannot be achieved using conventional PCM-based synthesis techniques. When playing these sounds using an optional Breath Controller (BC3) or MIDI Wind Controller (WX5), you can even capture some of the physical feel of woodwind instruments.

Effect Plug-in Boards

- **Vocal Harmony Plug-in Board (PLG100-VH)**
  With this board installed, you can add harmonies to selected parts using four types of effects. Chorus parts for vocals can be created automatically from chords that have been prepared and stored as MIDI data. You can also use the synthesizer like a vocoder by connecting and using a microphone while playing the keyboard.

Multi-Part Plug-in Board

- **XG Plug-in Board (PLG100-XG)**
  This Plug-in Board is a 16-part XG sound generator. You can play back XG/GM song files using the rich variety of sounds and effects on this board.

NOTE More Plug-in Boards will be available in future.

MODULAR SYNTHESIS PLUG-IN SYSTEM

About MODULAR SYNTHESIS PLUG-IN SYSTEM

The Yamaha Modular Synthesis Plug-in System offers powerful expansion and upgrade capabilities for Modular Synthesis-Plug-in-compatible synthesizers, tone generators and sound cards. This enables you to easily and effectively take advantage of the latest and most sophisticated synthesizer and effects technology, allowing you to keep pace with the rapid and multi-faceted advances in modern music production.

Maximum Polyphony

The maximum sonic polyphony is 64 for AWM2 (the figure includes Phrase Clips), plus the polyphony of the Plug-in Board (if installed). The actual note polyphony will vary depending on the type of tone generator unit used, the number of Elements in the Voice, and the note polyphony of the Plug-in Board.

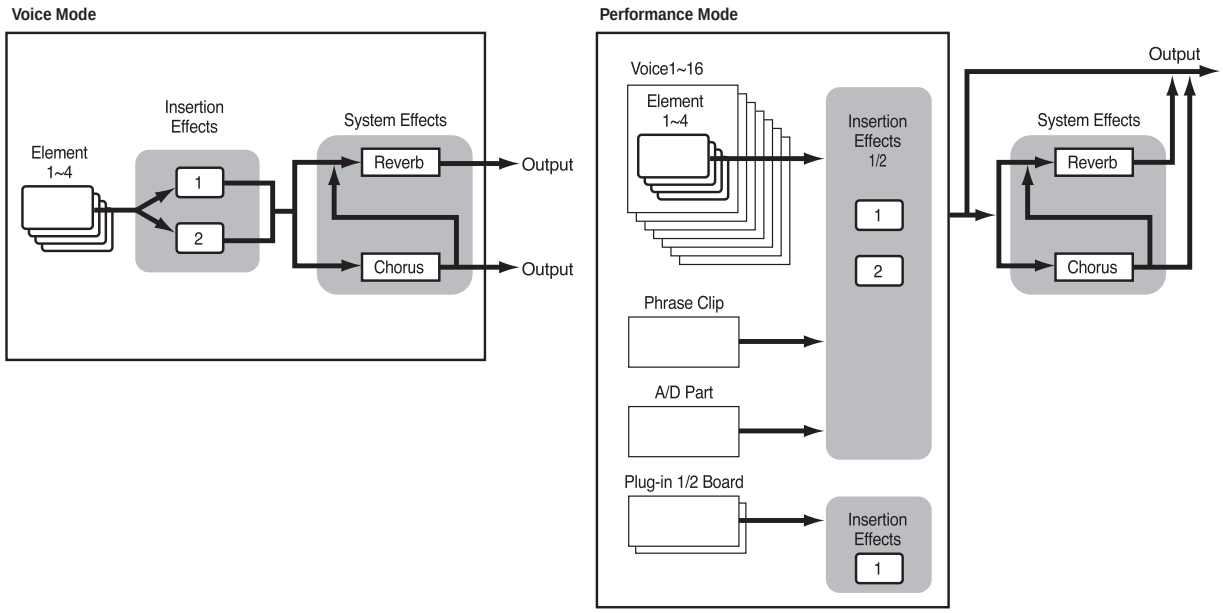
In the case of AWM2 Voices, the polyphony figure of 64 is divided by the number of Elements in the Voice. For instance, if a Voice consists of two Elements, the maximum note polyphony for the Voice is 32.

Effects Section

The effects can be used to change the sound of a Voice or Performance. There are two Insertion Effect Units plus a Reverb Unit (with 12 types of reverb) and a Chorus Unit (with 23 types of chorus). Each of the Insertion Effect units offers a variety of effects, and the units themselves can be connected in parallel or in series.

In Voice/Performance Mode, different Effects settings can be assigned to each Voice/Performance, though the way they are connected (series or parallel) varies slightly. As shown in the following illustration, the two Insertion Effect units can be independently switched on or off for each Element in a Voice. So basically, the Insertion Effects can be set on a per Element basis. After being passed through the Insertion Effects, the signals from all individual Elements are mixed and sent to the Reverb and Chorus Units. These Reverb and Chorus Units apply effects to the sound as a whole before it is sent to the outputs, and are therefore known as System Effects.

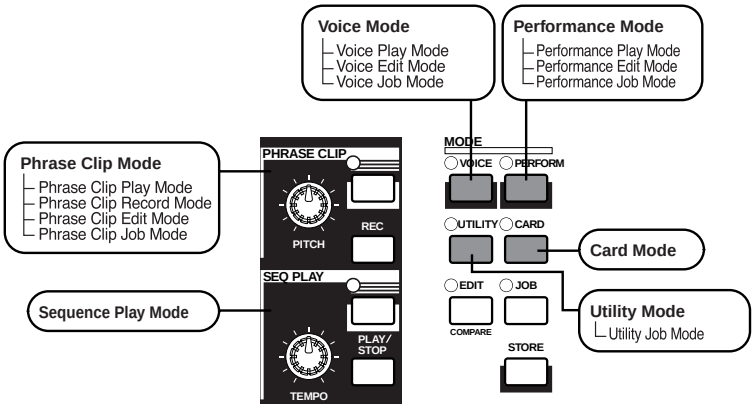
In Performance Mode, the Insertion Effects can be set for two Parts: a Voice, Phrase Clip or A/D Input Part, plus a Plug-in Part. However, the System Effects (Reverb and Chorus) are not applied to Parts, but to the Performance as a whole.



NOTE Details about Effects are given on Page 65.

About the Modes

The CS6x/CS6R has various Modes which you can select according to the task you wish to perform.



Voice Mode (Page 74)

Voice Play Mode
Normal Voices and Drum Voices can be played in this Mode. You can select from Preset Voices (256 Normal Voices plus 8 Drum Kits), Internal (User) Voices (128 Normal Voices plus 2 Drum Kits) and External (Memory Card) Voices (128 Normal Voices plus 2 Drum Kits). That is a choice of 512 Normal Voices and 12 Drum Kits. The choice is extended further still if you have an optional Plug-in Board installed.

The MIDI settings for Voices are set in Utility Mode.

Voice Edit Mode
Normal Voices and Drum Voices can be created and edited in this Mode. You can save up to 128 edited Normal Voices and 2 edited Drum Kits as User Voices in internal memory. You can also store them to Memory Card as external memory.

Voice Job Mode
In this Mode, you can copy and initialize Voices, and perform other such operations (Jobs) on them.

Performance Mode (Page 117)

Performance Play Mode
This Mode is used when playing Performances. You can layer multiple Voices (Parts) to create rich sonic textures. You can also create multitimbral setups by assigning Parts to different MIDI channels. You can layer A/D Input, Phrase Clip and Plug-in Parts, as well as AWM2-based Voices.

Performance Edit Mode
In this Mode, you can edit and create Performances. You can save up to 128 Performances to internal memory or up to 64 to external memory (Memory Card).

Performance Job Mode
In this Mode, you can copy and initialize Performances, and perform other such operations (Jobs) on them.

Phrase Clip Mode (Page 142)

Phrase Clip Play Mode
In this Mode, you can select and play Phrase Clips.

Phrase Clip Record Mode
You can record sounds into the synthesizer from a microphone or other audio source in this Mode. These sounds (Phrase Clips) can then be played back in real time via keyboard. Furthermore, Phrase Clips that you have already recorded can be re-recorded as new Phrase Clips after having, say, Chorus effects applied to them.

Phrase Clip Edit Mode
This Mode is used for editing Phrase Clips. Once you have recorded the Phrase Clips, you need to edit them to set their loop points and other parameters. You can also create Clip Kits by assigning them to notes on the keyboard.

Phrase Clip Job Mode
In this Mode, you can copy and delete Phrase Clips, and perform other such operations (Jobs) on them.

Sequence Play Mode (Page 161)

In this Mode, you can use the sequencer to play back Song files (Standard MIDI Files) held on Memory Card. The Songs can be played back individually or as a chain. By switching Performance, you can also change the sounds associated with each track in a Song.

Utility Mode (Page 163)

Select this Mode when setting parameters that apply to the synthesizer system as a whole. These include MIDI settings and synthesizer setup parameters.

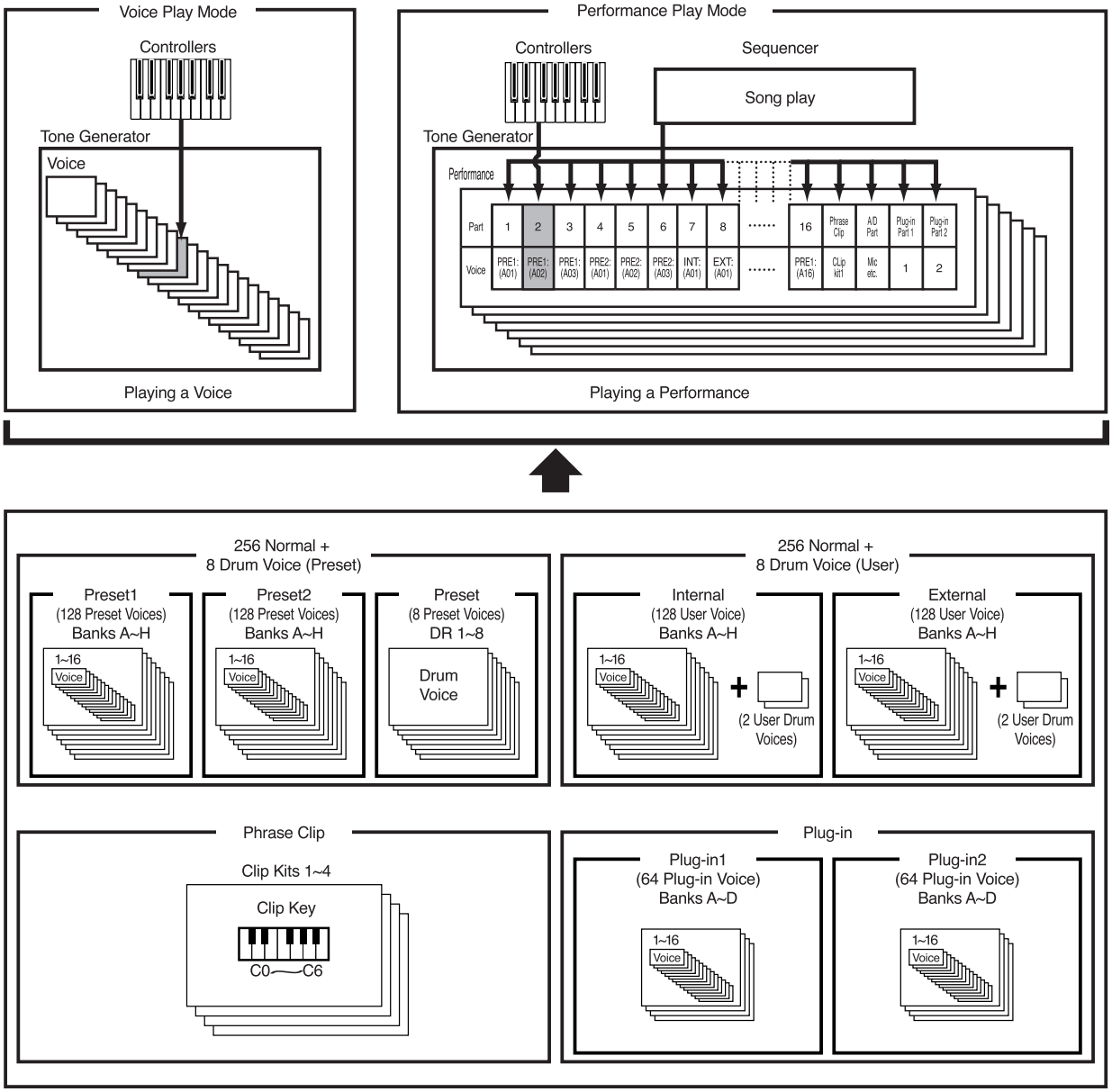
Utility Job Mode
In this Mode, you can restore the synthesizer's factory settings.

Card Mode (Page 171)

Insert a Memory Card into the CARD slot and you can save files to it, load files from it, and do various other things with the data on the card.

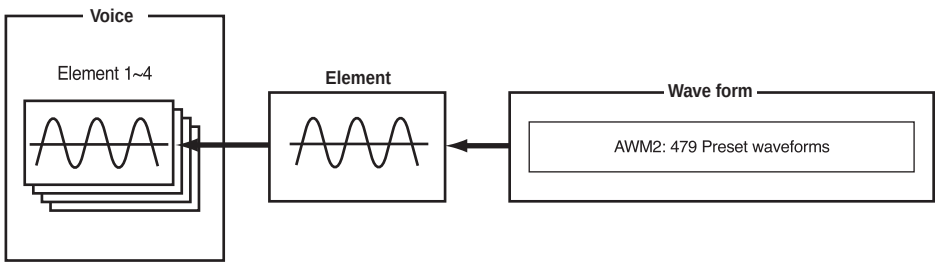
Voices

A Voice is a sound created from the many parameters set in the synthesizer. In Voice Play Mode, you can select and play any of these Voices. In Performance Play Mode, several different Voices (known as Parts in this Mode) can be layered and played simultaneously via keyboard or a sequencer. Four groups of Voices are available (Preset 1, Preset 2, Internal and External). Up to two further groups of Voices are available if optional Plug-in Boards have been installed.



An Overview of Voices/Waves

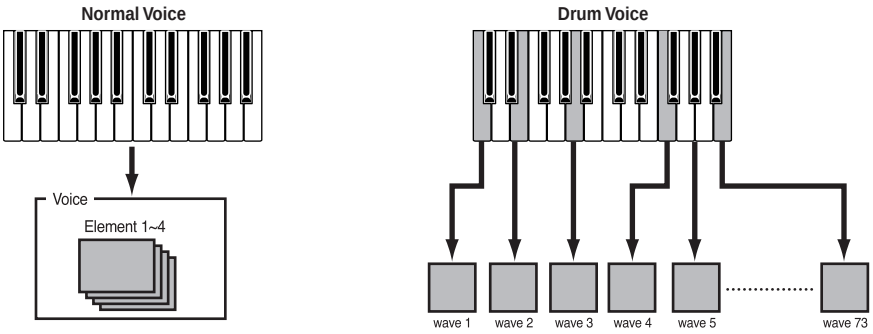
Each Voice consists of up of up to four Elements. Each Element itself uses a high-quality waveform.



Internally, there are two Voice Types: Normal Voices and Drum Voices. Normal Voices are mainly musical instrument-type sounds that can be played over the range of the keyboard. Drum Voices are mainly percussion/drum sounds that are assigned to individual notes on the keyboard. A collection of Drum Voice assignments is known as a Drum Kit.

If you have installed an optional Plug-in Board, there will be more Voices for you to choose from. These Voices are known as Plug-in Voices, and will vary depending on the Plug-in Board you have installed (Page 32).

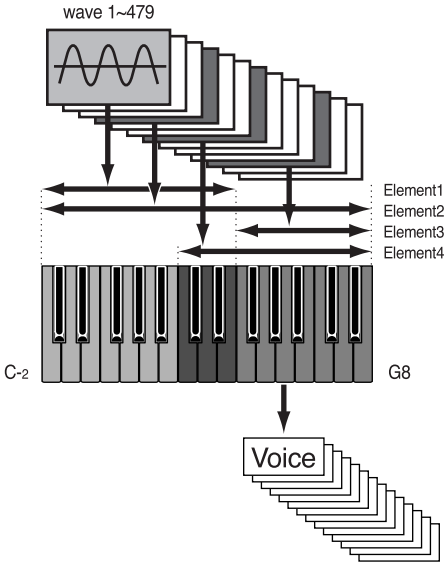
The Note Limit settings (Page 90) will also affect the allocation of sounds. But basically, Normal Voices (of up to four Elements) are playable across the whole keyboard range whereas with Drum Voices, any of 73 different Waves can be assigned to each Drum Key on the keyboard.



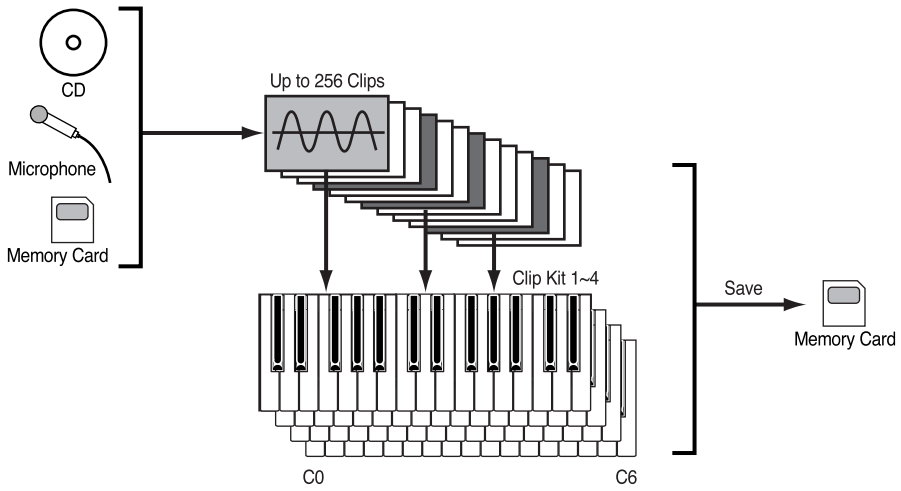
NOTE A total of eight Drum Voices (DR1 to DR8) are available as presets. You can also create your own Drum Voices and save them to internal (User) memory or to external memory (Memory Card), just as with Normal Voices.

Waves

Waves are waveforms used as Elements that make up a Voice. 479 high quality preset Waves are available. As shown in the following illustration, when creating a Voice, you can select the Wave to be used as an Element and then set its level, pitch, tone and other parameters.



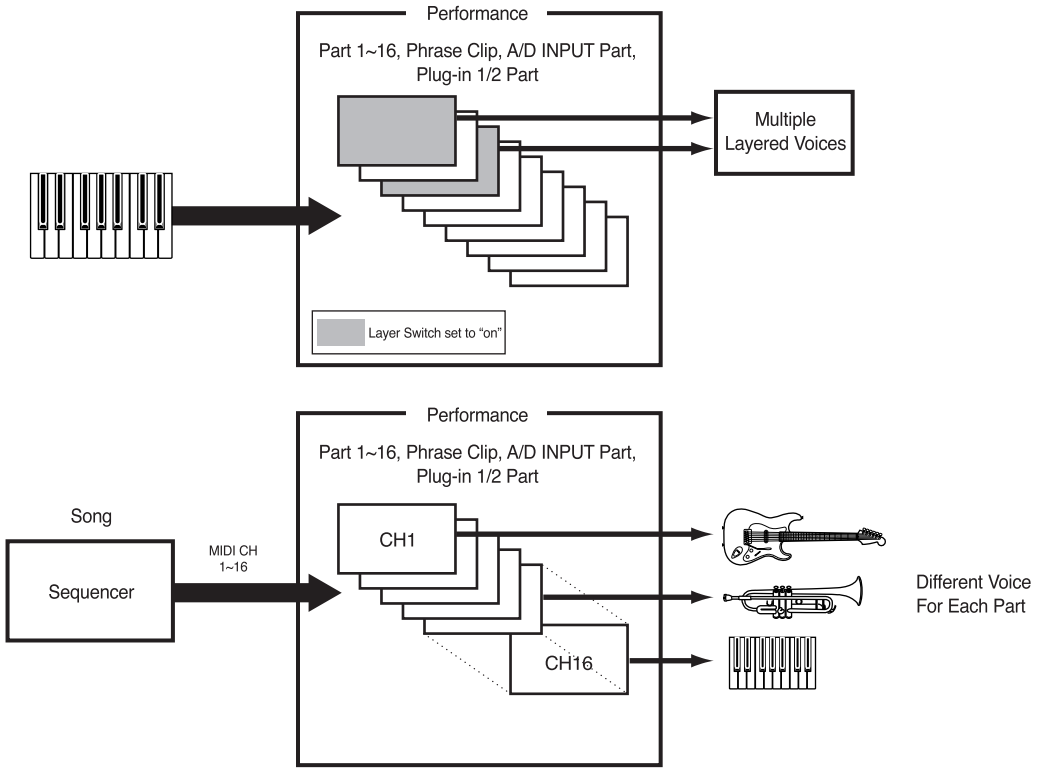
Another feature of the CS6x/CS6R is its ability to accept computer WAV/AIFF files and record real instruments, which you can then play back as musical instrument sounds. These types of sounds are known as Phrase Clips. You can record Waves through the microphone or line level jacks, and you can load Waves saved on Memory Card. The Waves can then be processed in Phrase Clip Edit Mode and assigned to notes (Clip Keys) on the keyboard to form a Clip Kit. Up to four Clip Kits can be held in memory. You can play these Clip Kits via the keyboard or you can assign them as Parts in a Performance.



NOTE The Clip Kit settings will be lost when you switch off your synthesizer. To avoid this situation, you should save your Clip Kit settings to Memory Card.

Performances

A Performance consists of up to 20 Parts, each of which can a Normal Voice, Drum Voice, Phrase Clip, A/D Input Part or Plug-in 1/2 Part. By switching on the Layer Switch parameter for different Parts (up to four), you can play back rich layered sounds in Performance Play Mode. You can also create splits so that different Parts are assigned to different areas of the keyboard. If you assign a different MIDI channel number to each Part, each track of a sequencer can play back a different Part.



NOTE In Performance Mode, several different Voices (Parts) can be layered to create rich textures. However, this can cause note response to become slower under some circumstances.

Easy Real-time Editing

Sound Control Knobs (CS6x only)

The Sound Control knobs allow you for on-the-fly alteration of the tonal characteristics and effects applied to the Voice or Part of a Performance that is currently selected. The functions of each of the knobs are explained here. The altered Voices or Performances can be stored anytime as Scene 1 or Scene 2 (Page 45). When saving each Voice or Performance (Pages 116, 141), its Scene information is also included. However, only the states of the two FILTER knobs, the ATTACK and DECAY knobs and Assignable Knobs [1] and [2] are stored with each Scene.

NOTE A preset of suitable parameter settings is assigned to each sound. By using each knob, you are in effect adjusting these settings by a certain amount. If these parameters are already preset at their minimum or maximum settings, the settings cannot be exceeded.

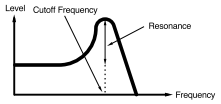
FILTER Knobs

These two knobs let you directly adjust filter parameters to control the tonal characteristics of the sound. Generally, filters are used to pass certain frequencies of a sound and block others.

NOTE The characteristics of the filter will vary depending on the Filter Type parameter setting for each Element of the Voice.

[CUTOFF] Knob
Use this knob to increase/decrease the filter cutoff frequency. Turn the knob clockwise to decrease the cutoff frequency, which will produce a brighter sound. Turn it anti-clockwise to increase the cutoff frequency, which has the effect of muffling the sound.

[RESONANCE] Knob
Use this knob to increase/decrease the harmonic boost applied to the sound around the cutoff frequency. Turn the knob clockwise to increase the boost and anti-clockwise to decrease it. You can give a unique characteristic to the sound by adjusting this parameter.



EFFECT Knobs

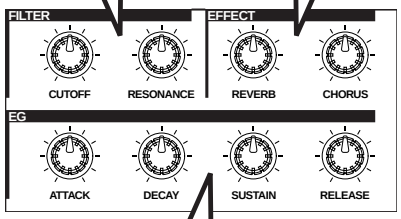
These two knobs let you directly set the amount of reverb and chorus applied to the sound.

[REVERB] Knob
Use this knob to increase/decrease the Reverb Send level, which is the amount of reverb applied to the sound. Turn the knob clockwise to increase the level and anti-clockwise to decrease it.

NOTE The effect of changing this parameter will vary depending on the Reverb Type parameter setting (Page 89).

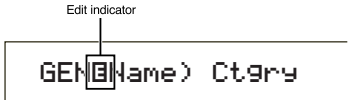
[CHORUS] Knob
Use this knob to increase/decrease the Chorus Send level, which is the amount of chorus applied to the sound. Turn the knob clockwise to increase the level and anti-clockwise to decrease it.

NOTE The effect of changing this parameter will vary depending on the Chorus Type parameter setting (Page 89).



The "E" indicator

When you move a knob, the E indicator is displayed to the left of the LCD. The indicator for the Voice or Performance remains displayed until you save your edits. If you need to keep your edited data, you should save it (Pages 116, 141).



EG (Envelope Generator) Knobs

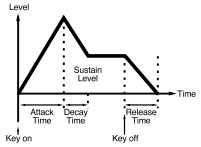
[ATTACK] Knob
Use this knob to extend/shorten the Attack time, which is the time taken for the sound to reach its peak level from the moment a note is played on the keyboard. Turn the knob clockwise to extend the Attack time and anti-clockwise to shorten it.

[DECAY] Knob
Use this knob to extend/shorten the Decay time, which is the time taken for the sound to drop from its peak level to a steady, continuous level. Turn the knob clockwise to extend the Decay time and anti-clockwise to shorten it.

[SUSTAIN] Knob
Use this knob to increase/decrease the Sustain level, which is the level of the sound maintained while the note is being held down. Turn the knob clockwise to increase the Sustain level and anti-clockwise to decrease it.

[RELEASE] Knob
Use this knob to extend/shorten the Release time, which is the time taken for the sound level to fade to zero after the note has been released. Turn the knob clockwise to extend the Release time and anti-clockwise to shorten it.

These four knobs let you directly control the "envelope" of the sound. Envelopes define the transitions in sound level from the moment you press a note on the keyboard to the moment the sound level fades out after you release the note. All instruments have their own definitive and varied envelopes, which can be simulated using these four parameters.



NOTE The functions assigned to each of these knobs are the same as those set in the Common Quick Edit Envelope Generator screens in Voice Edit (Page 78) and Performance Edit (Page 121).

Ideal for Playing Live

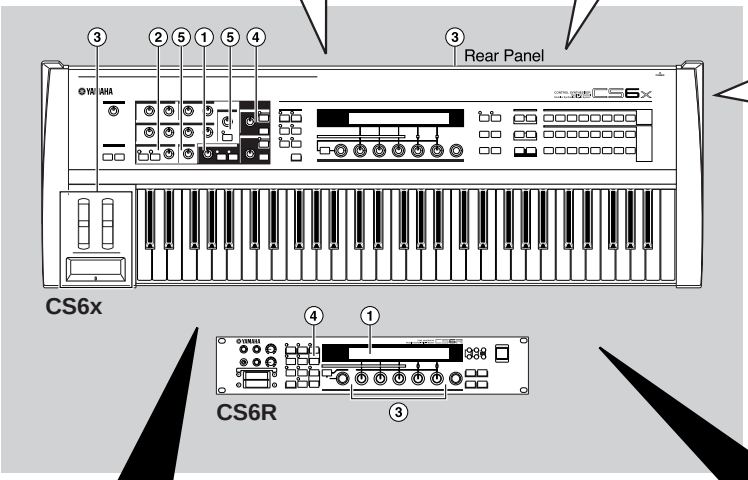
Many features of this synthesizer make it ideal for live performances. These features are explained here.

① Using the Arpeggiator (Page 42)

A wide variety of arpeggio patterns can be created automatically by just holding down a set of notes on the keyboard. You can specify the sound and the note range within which the arpeggiator is active, then use your left hand to hold down the notes being arpeggiated while using your right hand to play a melody line.

② Using the Scene (CS6x) Controls (Page 45)

Using the Sound Control knobs, you can edit sounds with ease. You can then assign two of these edits as Scenes, then switch between them or create a mix of the two in real time using the SCENE [1] or [2] keys and [CONTROL] knob on the front panel, or even a Foot Controller (Page 46).



③ Using the Controllers (Page 47)

The Pitch Bend Wheel, Modulation Wheel can be freely assigned to control various sound parameters in real time. By connecting an optional Foot Controller or Foot Switch, you can also use your feet to control parameters, to change Program Number, and so on (Page 52). Also, you can assign parameters to Knobs [A], [B], [C], [1] and [2] on the front panel below the LCD.

④ Using Phrase Clips (Page 53)

Existing Phrase Clips (waveform data) can be read or you can create your own Phrase Clips by recording from external audio sources, such as CD players.
Rhythm loops and breakbeats can easily be created. Assign a variety of Phrase Clips to notes on the keyboard to form a Clip Kit (of which you can create up to four). Then play this Clip Kit live or assign it to a Part in a Performance for playback using a sequencer.

⑤ Other Features (Page 59)

In addition to the Sound Control knobs, there is also a knob and an [ON/OFF] key for Portamento. These conveniently let you switch Portamento on or off and adjust the Portamento time in real time (CS6x).

NOTE The parameters for these features can be stored per Voice/Performance/Phrase Clip.

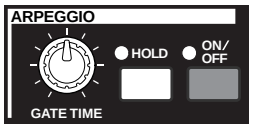
1 Arpeggiator

The arpeggiator is particularly suited to dance/techno music genres. You can assign any of 128 Arpeggio Types to each Voice, Performance or Clip Kit, and adjust the tempo. You can also set the Arpeggio Mode (the way in which the arpeggio is played back when you press a note) and Play Effects to create your own original grooves. Arpeggio information can be transmitted through the MIDI Out.

NOTE On the CS6R, the Arpeggiator's ON/OFF, GATE TIME, and HOLD functions are set in the relevant Edit Modes (Pages 82, 83).

Switching the Arpeggiator On/Off

The arpeggiator can be used in Voice, Performance or Phrase Clip Mode, and also when the sequencer is being used. You can switch the arpeggiator on/off using the ARPEGGIO [ON/OFF] key on the front panel. When switched on, the ARPEGGIO [ON/OFF] key LED will be lit.



NOTE If the arpeggiator is already switched on and ready for use, the ARPEGGIO [ON/OFF] key LED will light when you select the Voice, Performance or Clip Kit.

NOTE The on/off state of the arpeggiator is stored with each Voice, Performance or Clip Kit. (Pages 116, 141, 160)

NOTE You can check/change the Arpeggio Type, Tempo and other parameters in the Arp screen (Page 82) in Voice, Performance or Phrase Clip Edit Mode.

Using the Arpeggiator

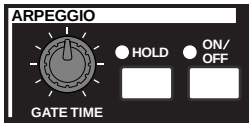
When the arpeggiator is switched on, the notes you play (and hold down) on the keyboard will be arpeggiated using the currently selected Voice, Performance or Clip Kit, and according to the Arpeggio Type, Tempo and Note Limit settings.
In Voice Mode, the currently selected Voice will be arpeggiated.
In Performance Mode, the Voices of Parts for which both the Layer and Arpeggiator are switched on, are arpeggiated (Page 133).
In Phrase Clip Mode, the currently selected Clip Kit (the Phrase Clips assigned to the notes you play) will be arpeggiated.

NOTE Only notes within the Note Limit range will be arpeggiated. Therefore, if the notes you play are not arpeggiated, they may be outside this range. Details about the Note Limit settings are given later.

NOTE The Pitch Bend and Modulation Wheels can be used while the arpeggiator is running.

Changing the Gate Time

You can use the [GATE TIME] knob on the front panel to change the gate times (lengths) of notes played by the arpeggiator. Assuming that the knob is centered (i.e., the Gate Time setting is 100%), turning the knob clockwise will increase the Gate Time to a maximum of 200% and turning it anti-clockwise will shorten it to a maximum of 0%. You can vary note lengths in real time by using this knob while the arpeggio is playing. However, the effect will vary depending on the sound and phrase settings.



Changing the Arpeggio Type, Tempo and Note Limit.

You can choose from 128 different Arpeggio Type presets. You can also freely vary the Arpeggio Tempo to suit the song. The Note Limit parameter can be used to define the effective note range of the arpeggio.

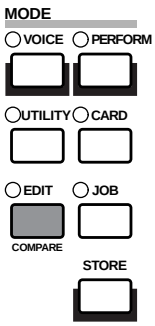
Each parameter applies to, and is stored with, each Voice, Performance or Clip Kit. By playing notes on the keyboard and listening to the arpeggio, you can adjust these parameters by ear.

The arpeggiator's parameters are available in each Edit Mode. In the following Voice Mode example, the Arpeggio Type is set for a Drum Voice in Preset Drum 1.

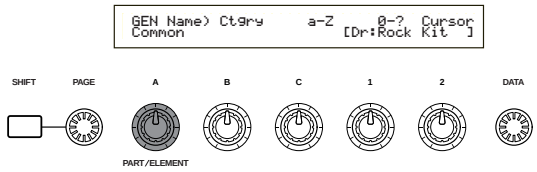
NOTE To select the Preset Drum, press the MEMORY [PRE2] key while holding down the MEMORY [PRE1] key, then press a PROGRAM key. Here, we will choose Preset Drum 1 so you should press the PROGRAM [1] key. On the CS6R, press the [PRE2] key while holding down the [PRE1] key, press the [ENTER] key, then select the Drum Voice using the [PAGE] knob.

Selecting the Arpeggio Type

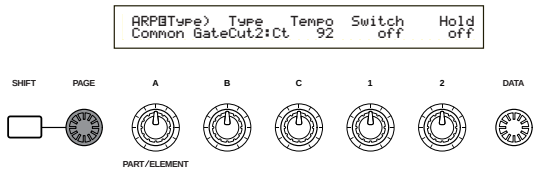
1. Press the [EDIT] key in Voice Play Mode. You will enter Voice Edit Mode at the screen where you previously exited.



2. Turn Knob [A] fully anti-clockwise until Common is displayed on the bottom line. Voice Edit Mode consists of two different Edit screens: Common Edit (for parameters common to all Drum keys/Elements) and Drum key/Element Edit. The Arpeggiator parameters are found in the Common Edit screens that you have now selected.



3. Use the [PAGE] knob to switch to the ARP Type (Arpeggio Type) screen.

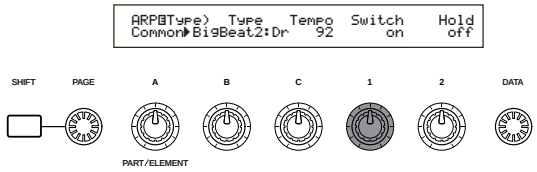


NOTE If you use the [PAGE] knob while holding down the [SHIFT] key, a menu will be displayed. You can quickly jump to the ARP screen by using the [PAGE] knob to move the cursor to the ARP item in the menu, then releasing the [SHIFT] key (Page 80).

4. Use Knob [B] to jump to the Type parameter. Now use Knob [B], the [DATA] knob or the [INC/YES] and [DEC/NO] keys to select the desired Arpeggio Type. Let's choose "BigBeat2" here.

5. Use Knob [1] or the [ARPEGGIO] key on the front panel to switch the arpeggiator on. When you play the keyboard, the drum pattern can now be heard.

NOTE You can play multiple patterns simultaneously by pressing more than one note on the keyboard.



Now try assigning different Arpeggio Type and Drum Voice settings. There are many different drum patterns available.

Arpeggio Types are divided into the five following categories and applications are not just limited to drum patterns. You can also select Arpeggio Types for backing chords, basslines and so on.
Next, why not try out Arpeggio Types with Normal Voices and Phrase Clips?

NOTE When setting the Arpeggio Category to Ct (Control), you also need to set the Key Mode parameter (two screens ahead) to "direct."

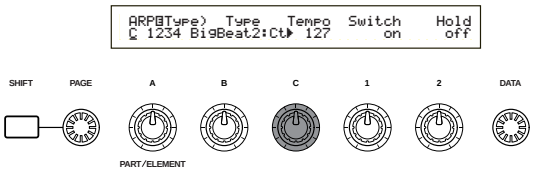
Sq (Sequence):
Creates a general arpeggio phrase. Mainly octave up/down phrases.
Ph (Phrase):
Creates more musical phrases than Sq. Starting with "Techno," there are phrases for a wide variety of musical genres, and for creating backing tracks for guitar, piano and other instruments.
Dr (Drum Pattern):
Creates drum pattern-type phrases. Phrase genres covered include rock and dance. This Type is ideal for use with drum and percussion sounds.
Cl (Phrase Clip):
Select this type to a Clip Kit that is assigned with loop-mixed or loop-divided Phrase Clips, to create a new arpeggio pattern.
Ct (Control):
Creates tonal changes. No note information is created. The Key Mode parameter in Arpeggio Mode must be set to "direct."

NOTE Details about Arpeggio Types are given in the separate Data List.

NOTE You can also use a foot switch (optional) to switch the Arpeggiator on and off (CS6x). Details about assigning parameters to the foot switch are given on Pages 53, 165.

Setting the Tempo

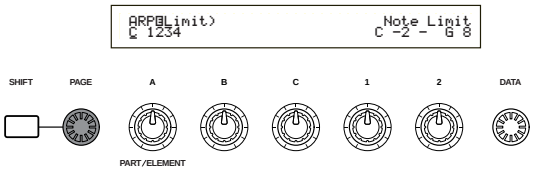
You can use Knob [C] to adjust the tempo between 25 and 300 BPM. This parameter setting is used by the Arpeggiator. Use Knob [C] to jump to the Tempo parameter. Now use Knob [C], the [DATA] knob or the [INC/YES] and [DEC/NO] keys to set the tempo. You can also set the tempo using the [TEMPO] knob on the front panel.



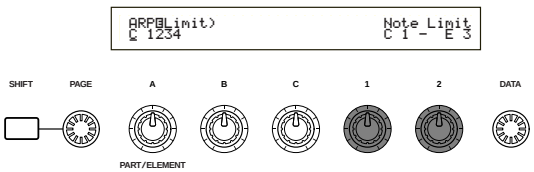
Setting the Note Limit

Using the Note Limit parameter, let's set up a Normal Voice (say, Voice Program Number 2 of Internal:champ) such that the Arpeggiator is enabled in the lower part of the keyboard but the upper part can be used to play melody lines. You'll need to have already set the Arpeggio Type (say, MuteLine).

❶ The Note Limit parameters can be set in the ARP Limit screen, which follows immediately after the ARP Type screen mentioned in step ❸ (earlier). Use the [PAGE] knob to switch to the screen.

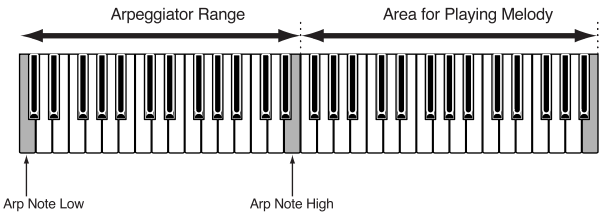


❷ Use Knob [2] to jump to the parameter for the highest note in the range, and to set the note. Alternatively, you can set this parameter by pressing the note (say, E3) on the keyboard while holding down the [SHIFT] key. Similarly, the lowest note in the range can be set using Knob [1], or by pressing the note while holding down the [SHIFT] key.



NOTE Knobs [1] and [2] are used to set the Note Limits of the keyboard range within which the arpeggiator will play back. The cursor (▶) immediately jumps to each respective parameter when Knobs [1] and [2] are used. Once the cursor is at the parameter, you can also use the [DATA] knob or the [INC/YES] and [DEC/NO] keys to enter settings.

Outside the Note Limit range, you can play the keyboard normally without the notes being arpeggiated. Therefore, you can use your left hand to play block chords used by the Arpeggiator and your right hand to play melody lines in the upper part of the keyboard.



NOTE Combined with the OSC Limit parameter of the Element Edit screen, the sound used in the lower part of the keyboard can be different from that in the upper part.

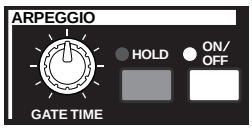
NOTE Following the example in this manual, if you select Voice Program Number 002 of INT, Portamento is already set for this Voice. Use the PORTAMENTO knob and [ON/OFF] keys to change the portamento time and switch portamento on/off (Page 59).

Using the Arpeggiator Hold

With Arpeggiator Hold switched on, the arpeggiator will continue to play back, even after you have released your fingers from the notes on the keyboard. The same arpeggio pattern will be played back until you press another set of notes on the keyboard.

You can switch Arpeggiator Hold on/off using the ARPEGGIO [HOLD] key. When switched on, the ARPEGGIO [HOLD] key LED is lit.

Press the ARPEGGIO [HOLD] key for the Voice you edited earlier (for which you set the Note Limit parameter). With Arpeggio Hold switched on, the Arpeggiator will continue to play back, even after you have released your left hand from the keyboard. This leaves your left hand free to perform other tasks, such as adjusting the Sound Control knobs.



NOTE If Arpeggiator Hold is switched on and ready for use, the [HOLD] key LED will light when you select the Voice, Performance or Clip Kit.

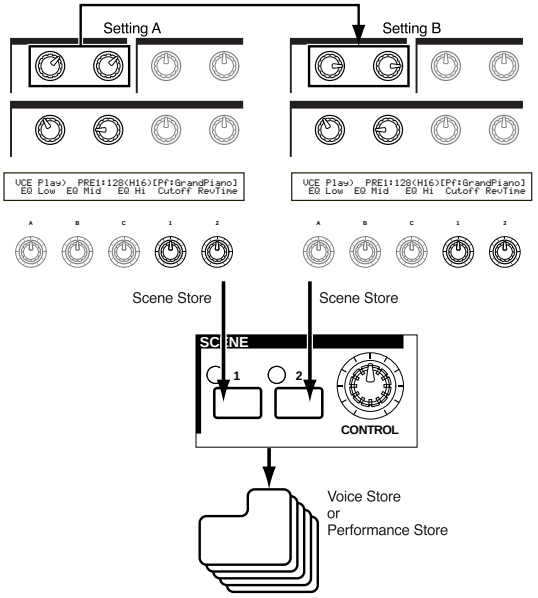
NOTE Depending on the method of storage (Pages 116, 141, 160), the [HOLD] key state (on/off) can be saved with the Voice, Performance or Clip Kit.

NOTE You can set the [HOLD] key state in the Arp screen (Page 82) in Voice, Performance or Phrase Clip Edit Mode.

② Scene Controls (CS6x)

Scenes are used to memorize the positions of the FILTER [CUTOFF]/[RESONANCE] knobs, EG [ATTACK]/[DECAY] knobs and Assignable Knobs [1]/[2], and can be recalled later at the touch of a button. You can use the knobs to edit the sounds in real time, then store their positions with each Voice/Performance as Scene 1 and Scene 2.

As an example, the illustration below shows two different groups of knob settings (A and B) assigned, respectively, to the SCENE [1] key and the SCENE [2] key. In effect, what this means is that two types of sound can be memorized and recalled for each Voice/Performance. What's more, you can use the SCENE [CONTROL] knob to create a smooth transition from one Scene to the other, or even a mix between Settings A and B.



Scene Settings

NOTE When stored, the Scenes are held in a temporary edit buffer and the settings are lost if you switch to another Voice or Performance, or if you change Mode. Therefore, once you have stored the Scene, you should store the Voice or Performance; the Scene settings will be stored along with it.

1. In Voice/Performance Mode, select the Voice/Performance for which you wish to store Scenes.

   NOTE When you switch between Voices or Performances, one of the Scenes will always be selected (the SCENE [1] key or SCENE [2] key LED will be lit). Therefore, the settings for the Scene you are about to switch to will be different to those of the currently selected Scene. It is also possible that the LEDs for both SCENE keys will be lit, meaning that the sound uses a mixture of both Scenes.

2. Use the Sound Control knobs and Assignable Knobs [1]/[2] to get the sound that you will store as a Scene.

   NOTE Each Voice can have its own settings for Assignable Knobs [1]/[2] (Pages 51, 84).

3. If you wish, you can set up a different Scene for the other SCENE key.

4. Store the Voice (Page 116) or Performance (Page 141); its Scene settings will be stored with it.

   If you store the Voice or Performance while the LEDs of both SCENE keys are lit (i.e., after adjusting the SCENE [CONTROL] knob), this state will also be stored with the Voice or Performance.

Storing Scenes

If you use the Sound Control knobs or Assignable Knob [1]/[2] to change the sound settings while the LEDs for both SCENE keys are lit (i.e., a mixture of settings from both Scenes is being used), these new settings should be stored to either SCENE key as a new Scene. This operation is known as Scene Store, and is explained as follows.

1. Press the SCENE [1] or SCENE [2] key while holding down the STORE key. The LED for the key you select will light and the positions of the knobs will be stored.

   NOTE As explained earlier, if you edit the sound while either SCENE key LED is lit, this means that you are editing the Scene directly so you do not need to perform a Scene Store.

2. Store another Scene to the other SCENE key if necessary.

3. Store the Voice (Page 116) or Performance (Page 141) to save the Scene settings.

Recalling Scenes

You can easily recall a Scene by pressing the SCENE [1] key or SCENE [2] key. The SCENE key's LED will light.

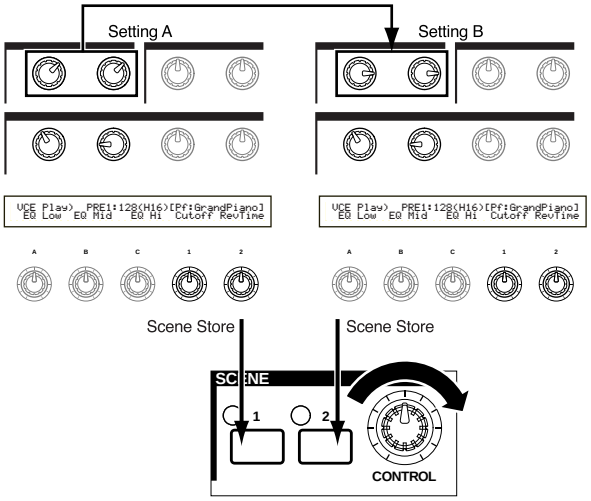
NOTE When you switch between Voices or Performances, one of the Scenes will always be selected (the SCENE [1] key or SCENE [2] key LED will be lit). It is also possible that the LED for both SCENE keys will be lit, meaning that the sound uses a mixture of both Scenes.

NOTE When you recall a Scene, the knob position settings for that Scene will be recalled, regardless of the current physical positions of the knobs.

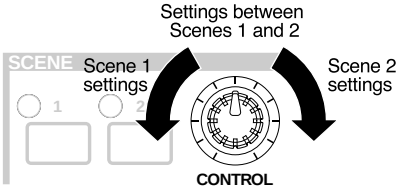
Using the SCENE [CONTROL] Knob

The SCENE [CONTROL] knob lets you create a smooth transition from one Scene to the other, or even a mix between the settings for both Scenes. As an example, the illustration below shows two different groups of knob settings (A and B) assigned, respectively, to the SCENE [1] key and the SCENE [2] key. Starting with the SCENE [CONTROL] knob at its fully anti-clockwise position, turn the knob clockwise to create a smooth transition from the Scene 1 settings to those of Scene 2.

For example, the Resonance can be increased and LFO speed can become faster between Scenes. Multiple changes to the sound can be applied in one go using just the one knob, making this feature ideal for live performances.



Turn the SCENE [CONTROL] fully anti-clockwise to switch to Scene 1 or fully clockwise to switch to Scene 2. If you set it to a position in between, a mix of settings taken from both Scenes will be used. By turning the knob from one end to the other, a smooth transition from one Scene to the other is created. While the knob is in a position other than fully clockwise or anti-clockwise, the LEDs for both the SCENE [1] and SCENE [2] keys will be lit.

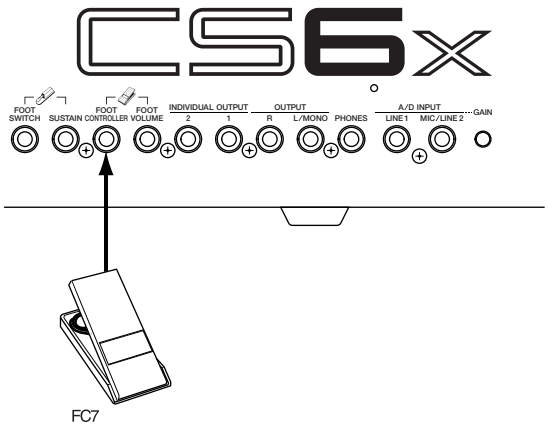


NOTE You can also assign Volume, Pan and other Control Change numbers to the SCENE [CONTROL] knob (Page 165).

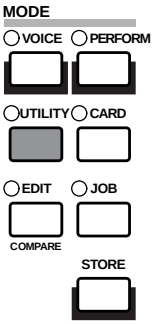
Controlling Scenes by Foot Controller (CS6x)

By connecting an optional Foot Controller (such as the FC7) to the FOOT CONTROLLER jack on the rear panel of the synthesizer, you can switch between Scenes by foot without having to use your hands. You can set this up as follows.

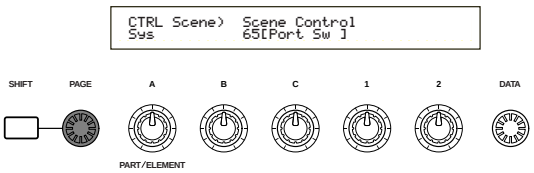
CS6x



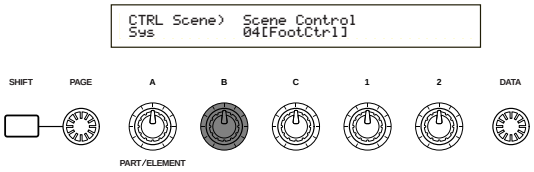
1 Press the [UTILITY] key to enter Utility Mode.



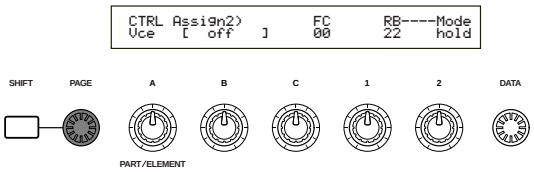
2 Use the [PAGE] knob to switch to the CTRL Scene (System Control Scene) screen.



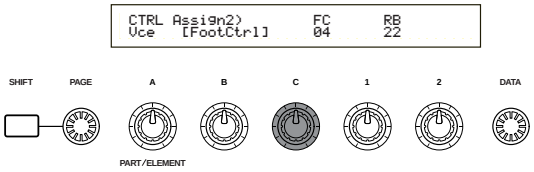
❸ Use Knob [B] to select “04:FootCtrl” (Foot Controller).



❹ Use the [PAGE] knob to switch to the CTL Assign2 (Voice Control Assign 2) screen.



❺ Use Knob [C] to select “04:FootCtrl” (Foot Controller).



Switch to Voice Mode and you are now ready to use the Foot Controller to control Scenes.

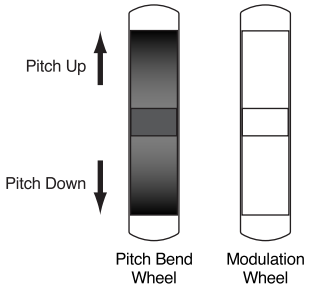
NOTE The above procedure is for assigning a Foot Controller to control Scenes in Voice Mode. For Performance Mode, follow the same procedure but at steps 4 and 5, switch to the CTL Assign2 screen in Performance Edit Mode.

③ Using Controllers

The CS6x is equipped with Pitch Bend and Modulation Wheels, plus a Ribbon Controller. Either of the CS6x and CS6R is equipped with front panel Knobs [A], [B], [C], [1] and [2], with which you can control many different parameters.

Pitch Bend Wheel

This wheel’s prime function is to control pitch. Roll the wheel upward/downward to bend the pitch upward/downward. The effect can also be reversed.

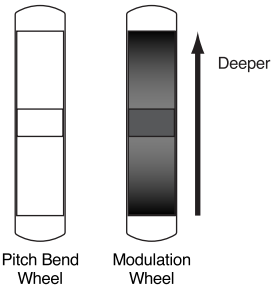


NOTE Pitch Bend Range can be set for each Voice. The wheel can also be assigned other parameters (Page 84).

NOTE Even if a different parameter is assigned to the wheel, Pitch Bend messages are still transmitted through the MIDI Out when it is being used.

Modulation Wheel

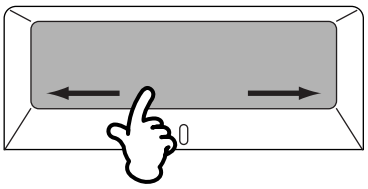
The more you roll this wheel upwards, the greater the modulation that is applied to the sound.



NOTE Modulation depth can also be set beforehand. Also, the wheel can be assigned different parameters, such as Volume or Pan (Page 84).

Ribbon Controller (CS6x)

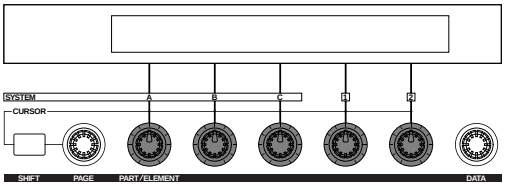
The Ribbon Controller is a touch-sensitive controller that lets you control, say, Filter Cutoff in real time by running a finger lightly across its surface to the left or right. Normally, its assigned parameter will increase in value as you run you finger to the right, though you can set it to do the opposite. The Ribbon Controller can be assigned many different parameters (Page 84).



NOTE Ribbon Controller parameters can be set for Utility Mode (Pages 164, 169).

Knobs [A]/[B]/[C]/[1]/[2]

In Voice/Performance Play Mode, Knobs [A], [B], [C], [1] and [2] can be used as real-time controllers. Knobs [A], [B] and [C] are assigned to control the equalizer gain of, respectively, EQ Low, EQ Mid and EQ Hi. With Knobs [1] and [2], you are free to assign different parameters per Voice.



If you turn any knob clockwise, the value assigned to it is incremented. Conversely, the value is decremented if you turn it the other way.

NOTE Common system parameters are assigned to Knobs [A],[B] and [C] (Pages 50, 165). Voice-specific parameters are assigned to Knobs [1] and [2] (Pages 51, 84).

NOTE A preset of suitable parameter settings is assigned to each Voice. By using each knobs [1] and [2], you are in effect adjusting these settings by a certain amount. If these parameters are already preset at their minimum or maximum settings, the settings cannot be exceeded.

NOTE In any Edit Mode, Knobs [A], [B], [C], [1] and [2] are used for entering parameter settings on screen (Page 24).

Foot Controller (CS6x)

An optional Foot Controller (such as the FC7), connected to the FOOT CONTROLLER jack (Page 18) on the rear panel, can be assigned a number of controller parameters. By using a foot controller for parameter control, both your hands are left free to play the keyboard (or to operate other controllers). This is very convenient if you are playing live.

NOTE Foot Controller parameters can be set for each Voice.

Foot Switch (CS6x)

An optional Yamaha FC4 or FC5 Foot Switch connected to the rear panel FOOT SWITCH jack (Page 18) can be assigned to a range of parameters. It is suited for a switch-type (on/off) controls such as Portamento Switch, increment/decrement of a Voice or Performance Number, start/stop of the Sequencer, holding Arpeggiator on or off. The Foot Switch is not well suited for continuous control. You could also use it to switch to between different Voices or Performances

NOTE The parameter assigned to the Foot Switch is set in the CTRL Other screen of Utility Mode (Pages 52, 165).

Sustain (CS6x)

With an optional Yamaha FC4 or FC5 Foot Switch connected to the SUSTAIN jack (Page 18) on the rear panel. This is useful when playing piano-type sounds.

NOTE You cannot assign a function other than Sustain to the SUSTAIN jack.

Foot Volume (CS6x)

Connect an optional Foot Controller (such as the FC7) to the FOOT VOLUME jack of the rear panel (Page 18). You can then use your foot to control Main Volume or Expression parameters, leaving your hands free to play the keyboard. This is very useful if you are playing live.

NOTE The parameter assigned to the Foot Volume controller is set in the CTRL Other screen of Utility Mode (Page 165).

Breath Controller

You can connect an optional Breath Controller (BC3) to the BREATH jack (Page 18) on the rear panel (or the front panel of the CS6R). Then use it to control a large number of the synthesizer's parameters, particularly those controlled by a wind player's breath: dynamics, timbre, pitch and so on. The Breath Controller is ideally suited for realistic expression with wind instrument type Voices.

NOTE Breath Controller parameters can be set for each Voice.

Aftertouch

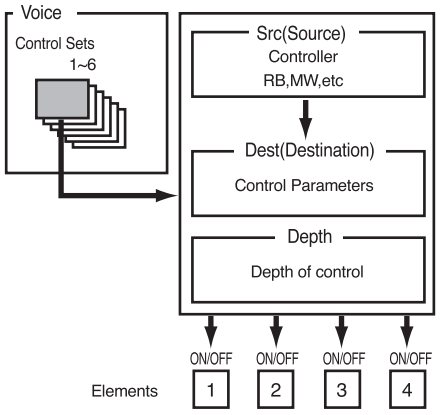
Aftertouch lets you, for example, add vibrato to a sound by applying further pressure to a note on the keyboard while it is being held down. (With the CS6R, an aftertouch-sensitive controller keyboard must be connected.) This allows real-time expression and control. Aftertouch can be used to control a wide variety of parameters (Page 84).

Control Sets

Aside from their default parameters, keyboard aftertouch, the controllers and some of the knobs on the front panel can be assigned with various parameters, as explained on Page 47. For example, you could assign Resonance to the Modulation Wheel and set aftertouch to apply vibrato. You are free to assign parameters to suit the kind of sound being played.

These controller assignments are known as Control Sets. As the following illustration shows, you can assign up to six different Control Sets per Voice. For each Phrase Clip, you can assign up to four different Control Sets. Within each Control Set, the controller is known as the Source (Src) and the parameter controlled by the Source is known as the Destination (Dest). There are various Dest parameters available; some will apply to the Voice as a whole, while some will be specific to each of its Elements. Details are given in the Controls List of the separate Data List.

NOTE Details about the available Dest parameter settings are given in the Destination Parameter List of the separate Data List.

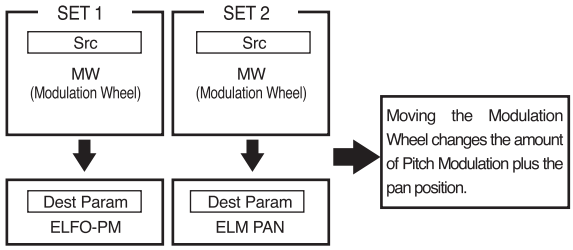


NOTE The Element Switches (Page 85) will be disabled if the Dest parameter setting is not specific for Elements (i.e., for settings 00 to 33).

By creating Control Sets, you can change sounds in a variety of ways.

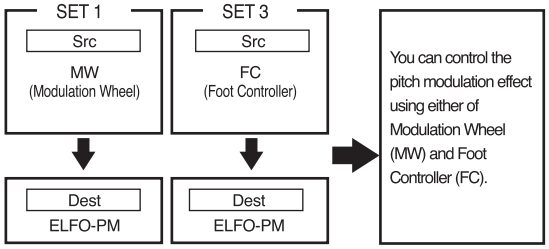
For example, set the Src (Source) parameter of Control Set 1 to MW (Modulation Wheel) and the Dest (Destination) parameter to ELFO-PM (Element LFO Pitch Modulation Depth). Then set the Src parameter of Control Set 2 also to MW, but set the Dest parameter to ELM PAN (Element Pan). You will also need to specify the Element to be controlled and also the depth (amount) of control.

In this example, when you move the Modulation Wheel upward, the amount of Pitch Modulation increases accordingly, the Element is panned from left to right. So in other words, you can assign several Dest parameters to each Src controller.



Continuing from the example above, now create another Control Set where Src is set to FC (Foot Controller) and Dest is set to ELFO-PM (Element LFO Pitch Modulation Depth). Again, specify the Element to be controlled and also the depth of control.

Now, Pitch Modulation is assigned to both the Modulation Wheel and Foot Controller. In other words, you can also assign several Src controllers to each Dest parameter.

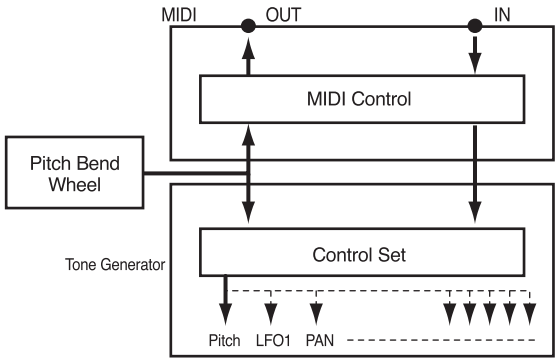


By assigning all six Control Sets, you will have a stunning degree of real-time control over the synthesizer's sounds.

Control Sets and External MIDI Control

In a Control Set, the controllers are assigned to the internal parameters of the synthesizer. However, some controllers were originally designed for a particular purpose, and send pre-defined MIDI Control Change messages when used, regardless of their Control Set allocations within the synthesizer.
For example, the Pitch Bend Wheel, Modulation Wheel and keyboard aftertouch were originally designed to control pitch bend, modulation and aftertouch. Therefore, when you use these controllers, pitch bend, modulation and aftertouch information is always sent to the MIDI Out.

Let's say the Pan parameter is assigned to the Pitch Bend Wheel in a Control Set. Now, when you move the Pitch Bend Wheel, the internal tone generator of the synthesizer will pan the sound but at the same time, the original pre-defined Pitch Bend messages will still be sent to the MIDI Out.



The controllers can also send MIDI Control Change messages to control the parameters of external MIDI devices. These assignments are found in the VOICE (Vce) CTRL Assign1/2 screen of Utility Mode.

NOTE As Pitch Bend Wheel, Modulation Wheel and keyboard aftertouch is pre-defined with specific MIDI controls, you cannot assign MIDI Control Changes.

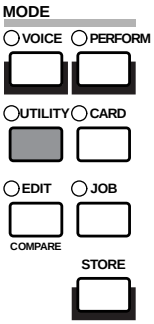
You can also set up a controller such that it sends one kind of Control message to the synthesizer's internal tone generator yet another kind to the MIDI Out.
For example, in a Control Set you could assign resonance to Assignable Knob [1]. Then, in the VOICE CTRL Assign2 screen of Utility Mode, you could assign Control Change Number 1 (Modulation) to the same knob. Now, when you turn the knob, resonance will be applied to the sound of the internal tone generator but at the same time, modulation information will be sent to the external MIDI device connected to the MIDI Out.

This aspect of the synthesizer makes it ideal for use as a master controller for controlling external MIDI devices. Add an optional Foot Controller or Breath Controller for even more control.

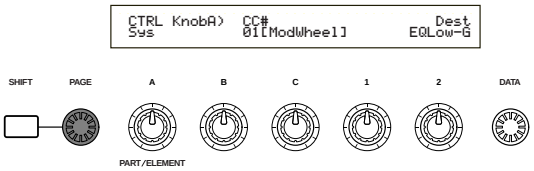
Assigning Parameters to Knobs [A], [B] and [C]

The following procedure explains how you can assign a desired parameter to Knob [A], [B] or [C]. You can assign any parameters that are common throughout the system (for all Play Modes) and any MIDI Control Change Numbers. In the example, Knob [A] will be set up to control Reverb Return.

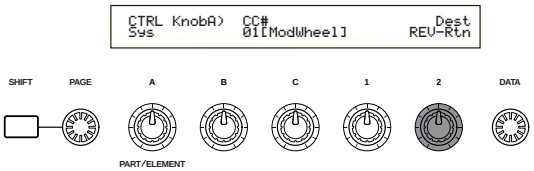
❶ Press the [UTILITY] key to enter Utility Mode.



❷ Use the [PAGE] knob to switch to the CTRL KnobA (System Control Knob A) screen.



❸ Use Knob [2] to select REV-Rtn (Reverb Return).



Now you can use Knob [A] for on-the-fly control of the Reverb Return level in Voice/Performance/Phrase Clip Play Mode. Note that you can also send (by turning Knob [A]) or receive Control Change messages with the Controller Number set in the CC# parameter through MIDI In and Out.

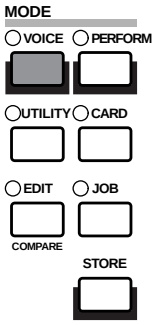
NOTE For assignable parameters, refer to "System Controller Destination Parameters" in the separate Data List.

Assigning Parameters to Knobs [1] and [2]

The following procedure explains how you can assign a desired parameter to Knob [1] or [2]. You can assign controllers to each Voice (or Part in a Performance) or Clip Kit. Control Settings can be assigned as a Control Set, and a each Controller can be used to control multiple parameters (although this varies according to the type of Voice or Clip kit). Here we introduce an example of how to set up Control Set 1 for Internal Voice 001 (A01) by assigning PCH-Crs (Pitch: Coarse) to Knob [1].

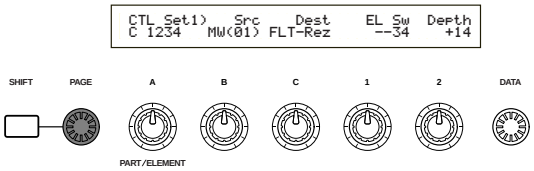
NOTE You can also assign, separately, a different MIDI Control Change Number to the same knob in Voice Mode and Performance Mode. Details are given on Page 168.

❶ Press the [VOICE] key to enter Voice Play Mode.

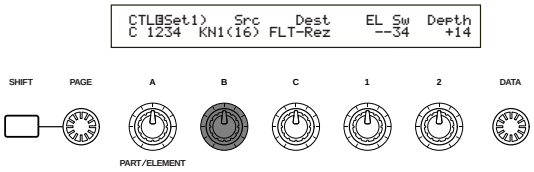


❷ Select Internal Voice 001 (A01) and press the [EDIT] key to enter Voice Edit Mode.

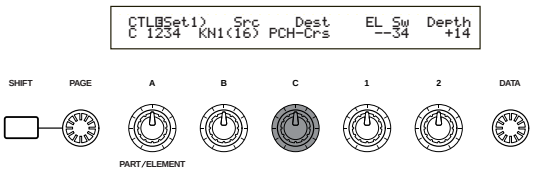
❸ Use the [PAGE] knob to switch to the CTL Set1 (Control Set 1) screen.



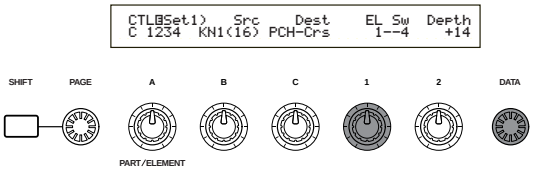
❹ Use Knob [B] to assign "KN1 (16)" (Knob [1]) to the Src (Source) parameter.



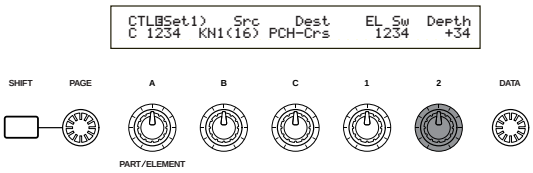
❺ Use Knob [C] to assign PCH-Crs (Pitch:Coarse) to the Dest (Destination) parameter.



❻ Use Knob [1] and the [DATA] knob to specify the Element to be controlled. Knob [1] moves the cursor (blinking) and the [DATA] knob displays the Element to be controlled.



❼ Use Knob [2] to set the Depth parameter. The larger the setting, the greater the depth of control.



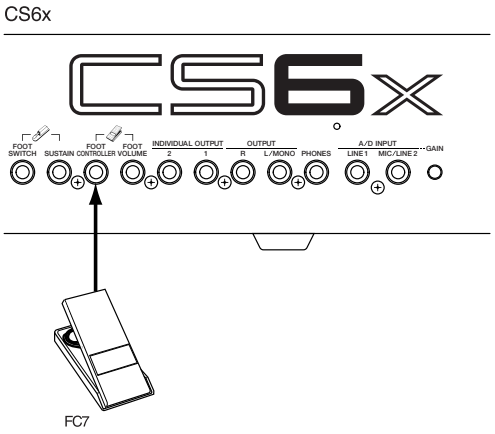
❽ Store the edited Voice (Page 116).

Now you have Internal Voice 001 (A01) assigned PCH-Crs (Pitch:Coarse) to Knob [1]. When you select and play this Voice in Voice Play Mode, you can control the pitch of the Voice if you turn Knob [1].

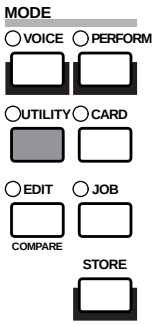
NOTE Details about the assignable control functions are given in the Control Set Destination Parameters in the separate Data List.

Controlling Parameters by Foot Controller (CS6x)

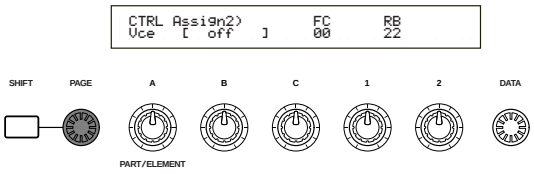
By connecting an optional Foot Controller (such as the FC7) to the FOOT CONTROLLER jack on the rear panel of the synthesizer, you can control various parameters by foot without having to use your hands. In the following example, we introduce how to set up Foot Controller to work as Modulation Wheel.



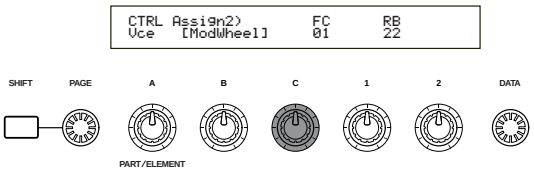
❶ Press the [UTILITY] key to enter Utility Mode.



❷ Use the [PAGE] knob to switch to the CTRL Assign2 (Voice Control Assign 2) screen.



❸ Use Knob [C] to select "01:ModWheel" (Modulation Wheel).



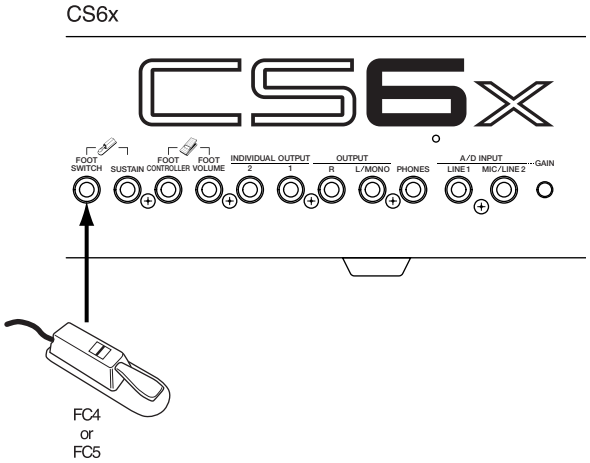
In Voice Mode, the foot controller can now be used to control Modulation.

NOTE If the current Voice has a Control Set with a source (Src) assigned to Modulation Wheel (MW) and receives a Control Change message of Modulation Wheel, a destination (Dest) parameter for the source (MW) will be affected with that message.

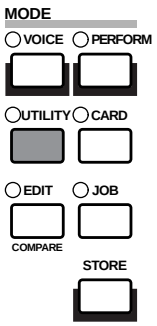
NOTE The above procedure explains how to set up the Foot Control to control Modulation in Voice Mode. To create such a setup for Performance Mode, the appropriate settings are found at the CTL Assign2 screen in Performance Edit Mode.

Switching Between Programs by Foot Switch (CS6x)

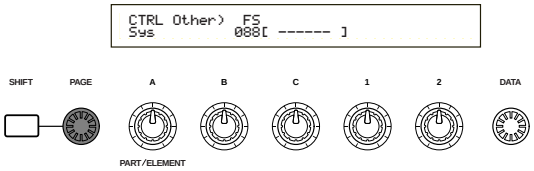
By connecting an optional Foot Switch (such as the FC4 or FC5) to the FOOT SWITCH jack on the rear panel of the synthesizer, you can switch between Programs without having to use your hands. For example, if you consecutively arrange the Voices/Performances in memory, you can switch between them easily in a live performance. The following procedure explains exactly how to a about this.



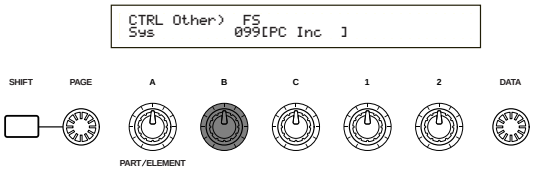
❶ Press the [UTILITY] key to enter Utility Mode.



❷ Use the [PAGE] knob to switch to the CTRL Other (System Control Other) screen.



❸ Use Knob [B] to select "099:PC Inc" (Program Change Increment).



In Voice/Performance/Phrase Clip Mode, the Foot Switch can now be used to switch between programs.

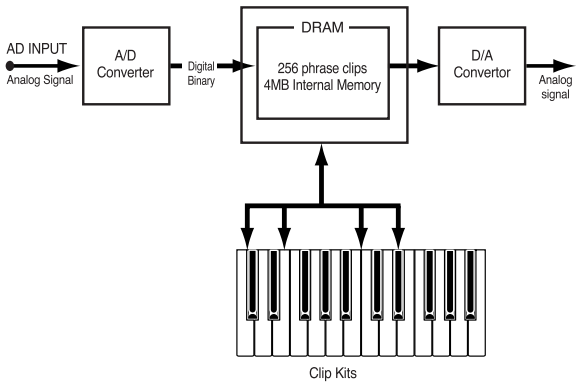
NOTE Alternatively, you can assign other functions such as Arpeggio Switch (On/Off), Sequencer (Play/Stop) and so on (Page 165).

④ Phrase Clips

Real-world sounds can be recorded or loaded into the synthesizer and played back as musical instruments sounds. The waveform data held in the synthesizer are knows as Phrase Clips. These Phrase Clips are created and played back in Phrase Clip Mode (Page 142). A basic overview of Phrase Clips is given here.

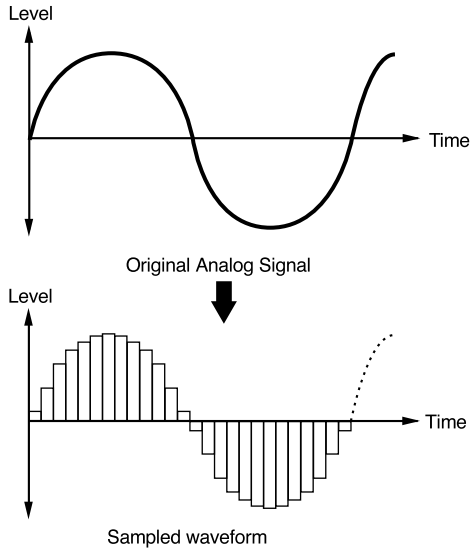
Phrase Clips Overview

As shown in the following illustration, on the rear panel (or the front panel of the CS6R), there is an A/D INPUT jack for inputting analog sources to the A/D converter. The A/D converter then converts the signals from these analog sources into digital binary signals through a process known as "sampling." Within the synthesizer, these sampled signals are called Phrase Clips, and up to 256 of these Phrase Clips can be held within the 4MB of internal memory. You can assign Phrase Clips to any keys on the keyboard to play them back. A collection of Phrase Clip keyboard assignments is known as a Clip Kit, of which you can create up to four. You can then assign Clip Kits to Performances, just like with Voices. When playing back Phrase Clips, the processing of signals is the opposite of A/D conversion. The digital signals are passed through a D/A converter to convert them back to analog form.



Sampling Rate and Bit Resolution

As an example, the illustration shows a sine wave. When recording (sampling) the sine wave, the A/D converter basically takes snapshots of the wave's levels at fixed intervals in time.



In the graph, the horizontal axis represents time and the vertical axis represents signal level.
The number of snapshots of levels taken in one second is known as the sampling rate and is given in Hertz. The A/D converter of this synthesizer has a sampling rate of 44.1kHz, which means that it takes 44100 snapshots of the waveform's levels within one second. The higher the sampling rate, the closer the reproduced (digital) signal is to the original.
On the vertical axis, the number of levels is given in bits and is known as the bit resolution. The A/D converter of this synthesizer has a bit resolution of 16 bits, which means that there are 2^{16} (i.e., 65536) levels on the vertical axis. As with the sampling rate, the higher the bit resolution, the closer the reproduced (digital) signal is to the original.
Incidentally, audio on CDs is also sampled at 44.1kHz in 16 bits.

Figure A: Lower sampling rate and bit resolution

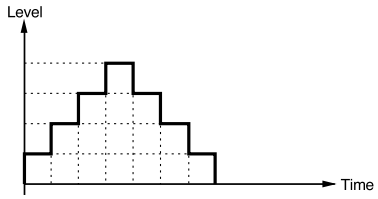
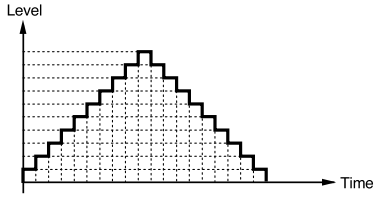


Figure B: Higher sampling rate and bit resolution



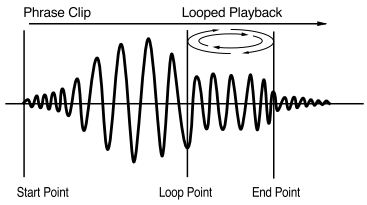
Playing Back Phrase Clips

You can play back your Phrase Clips in three different ways, as follows.

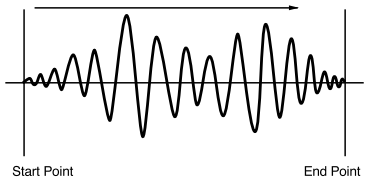
First, there is "loop" playback. A section of the Phrase Clip is continuously looped during playback. This is often used for creating drum pattern loops from breakbeats.

When you play a note on the keyboard, the Phrase Clip plays from the start point to the end point. It then returns to the loop point and plays to the end point again, and keeps doing this until you release the note.

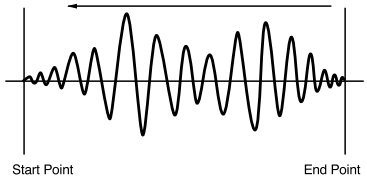
With musical instruments in general, the characteristic part of the sound (the "attack" section) is usually at the beginning, just after the start point. After this, the sound does not vary a great deal while the note is being held, and you can set the loop and end points at either end of this section. When playing back a Phrase Clip of an instrument that has been looped like this, the attack section of the sound is played back once and then the looped section is played back continuously until you release the note. Looping is also way of creating usable instrument sounds without using up too much memory.



The second playback method is known as "one shot." When you press a note on the keyboard, the Phrase Clip plays from beginning to end just once. This type of playback is commonly used for Phrase Clips of drum and percussion sounds.



Third, you can select "reverse" playback. When you press a note on the keyboard, the Phrase Clip plays from end to beginning just once. This is useful for creating reversed cymbal sounds and other special effects.



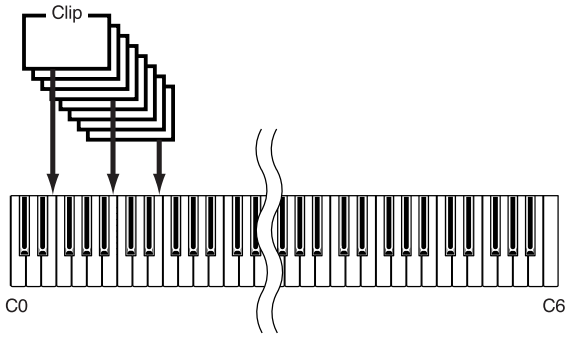
You can set points and playback modes for the loop in Phrase Clip Edit Mode (Page 146).

Creating a Clip Kit

You can assign Phrase Clips to notes on the keyboard (C0 to C6) and play them live or using a sequencer. You can also edit various parameters for each Phrase Clip. The assignment of Phrase Clips across the keyboard is known as a Clip Kit, and you can create up to four of these.

You can assign each Phrase Clip to one note on the keyboard. However, by assigning breakbeats and other rhythmic loops plus percussive Phrase Clips used in the rhythms, you can create a Clip Kit specifically for rhythms only. Or you could assign Phrase Clips of unusual sounds to create a Clip Kit of special effects. Essentially, you can create a Clip Kit consisting of any sounds that suit your needs.

Clip Kits can be treated the same as Voices and Performances. For instance, in Phrase Clip Play Mode, you can play Clip Kits directly using the keyboard (Page 142). In Performance Mode, a Clip Kit can be included as a Part in a Performance (Page 129).



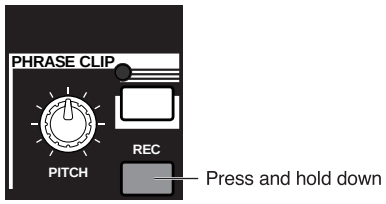
NOTE You can further edit Clip Kits and Phrase Clips in Edit Mode (Page 146) and perform jobs on them in Job Mode (Page 154).

⚠ When you switch off your synthesizer, the Clip Kit will be lost. Always save important data to Memory Card.

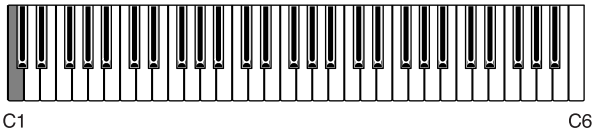
Recording a Phrase Clip

This section explains how to record a Phrase Clip, set the loop and so on, execute jobs, and create a Clip Kit.
You can create a Phrase Clip by recording from a microphone, CD player or some other audio equipment, or from an existing Voice/Performance/Phrase Clip in the synthesizer. As a simple example, we will record the drum pattern that was created earlier using the Arpeggiator and Drum Voice.

1. Before entering Phrase Clip Mode, first enter Voice Play Mode and press the MEMORY [PRE1] and [PRE2] keys simultaneously. Then use the [DATA] knob, the [DEC/NO] and [INC/YES] keys or the PROGRAM keys (CS6x) to select the Preset Drum Voices (DR1).
2. Now press the PHRASE CLIP key (its LED will light) to enter Phrase Clip Mode.
3. Hold down the PHRASE CLIP [REC] key and the following screen will be displayed. Here, you can assign a key to the Phrase Clip you are about to record. While still holding down the key simply press the respective key on the keyboard. Here, we will assign note C1. Now release the [REC] key to switch to the Recording screen.




```
PCLP Rec)  >>  Select Record Key  <<
           >>  C 1:off[           ]  <<
```



4. Use Knob [B] to set the Source parameter to "voice" The Drum Voice you selected earlier can now be played on using the keyboard.

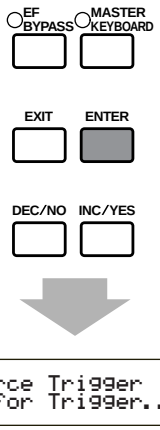
```
PCLP Rec) Source Trigger          [ENTER]
(Key=C 1)  voice   key         toStandby
```

5. Use Knob [C] to set the Trigger parameter to "key." With this setting, the recording process will begin when you press a note on the keyboard.
6. Press the ARPEGGIO [ON/OFF] key on the front panel (its LED will light) to switch the Arpeggiator on. When you press a note on the keyboard, a drum pattern will now play back according to the Arpeggiator settings. You can adjust the tempo using the SEQ PLAY [TEMPO] knob on the front panel. Before proceeding further, make sure that you have selected the correct sound.

NOTE With the CS6R, select the Drum Voice, enter Drum Voice Edit Mode (Page 102), set it's Arpeggio Switch parameter to "on," and then enter Phrase Clip Mode.

NOTE To prevent the deterioration in sound quality when recording, you should set a high output level for the Voice (in Voice Edit Mode).

❼Press the [ENTER] key and the Recording Standby state is entered. You will see the "Waiting for trigger..." message.




```
PCLP Rec) Source Trigger          [EXIT]
  <<  Waiting for Trigger...  >>  toStop
```

❽Recording will begin when you press the respective note on the keyboard. Press the note and let the drum pattern play for one bar.

❾Press the [EXIT] key. Recording will finish and the "Now Working..." message will be displayed.
The recorded Phrase Clip is now assigned to note C1, as set in step ❸. At this point, you can audition the recorded Phrase Clip by pressing note C1 while holding down the [REC] key.

NOTE There may be cases where a recorded volume level differs from one you monitored while recording. It is an effect by the automatic level adjustment function that corrects a recorded level for a proper playback. In these cases, you can adjust a playback level of the Clip in Phrase Clip Edit Mode. If you want to increase the entire volume, you can use the EQ Type parameter to set a value of "Boost12".

If you are not satisfied with the result, you can repeat the recording by pressing the [ENTER] key.

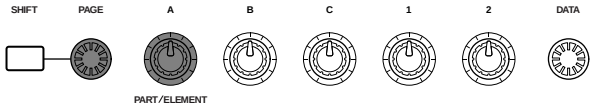
❿Once you exit Phrase Clip Record Mode, the recorded Phrase Clip will automatically be saved to memory (DRAM) with a new number and name (Clip 001).
Here, do not exit Phrase Clip Record Mode. Instead, press the [EDIT] key to enter Phrase Clip Edit Mode.

Editing the Phrase Clip

Continuing from step ❿ above, you are now ready to edit the Phrase Clip you have just recorded. In Phrase Clip Edit Mode, you can assign Phrase Clips to notes on the keyboard (between C0 and C6) to form a Clip Kit, create loops, edit the tonal characteristics and so on. Here, we will edit the recorded Phrase Clip in several ways.

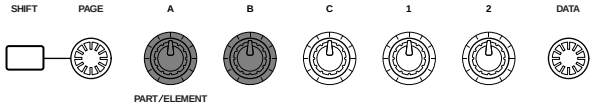
⓫In Phrase Clip Edit Mode, use the [PAGE] knob to switch to the OSC Asgn screen. Normally you would assign the Phrase Clip to a note on the keyboard (Clip Key) here. However, since we have already assigned it to note C1 in step ❸ the Phrase Clip name and number ([Clip 001]) will be displayed when you press note C1 on the keyboard or use Knob [A] to call up C1. When you press C1 to assign a Clip Key, the Phrase Clip will be played back.

```
OSC▣Asgn) Number      Variation [ENTER]
Key= C 1    1[Clip 001]       1 to Edit
```



Since it is somewhat inflexible to assign the Phrase Clip to just C1, we will also assign it to the white notes from D1 to C2. Select each respective notes by pressing it on the keyboard or by using Knob [A], and use Knob [B] to assign [Clip 001] to each.

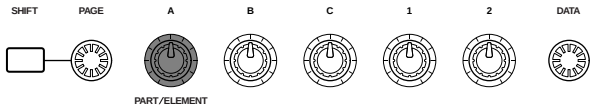
```
OSC▣Asgn) Number      Variation [ENTER]
Key= C 2    1[Clip 001]       1 to Edit
```



At the same screen, use Knob [1] to select a Variation.
A Variation refers to the method by which the Phrase Clip (including its loop points and other parameters) is played back. Using a Variation, each Phrase Clip can have up to eight different loop points. For example, when applied to the drum pattern Phrase Clip recorded earlier, Variations can be used to create a 1-bar loop pattern, a reversed pattern and other different playback styles.

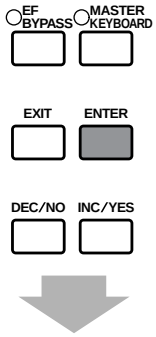
You have assigned the same Phrase Clip ([Clip 001]) to the white notes between C1 and C2. Now you can assign a different Variation to each of the notes. Select each respective note by pressing it on the keyboard or by using Knob [A], and use Knob [1] to assign a different Variation number (1 to 8) to each.
At this stage, the Variations themselves have not been set so Variations 1 to 8 will all play the Phrase Clip back in the same way. However, once you have set up all the Variations, the same Phrase Clip can be played back differently for each white note between C1 and C2.

```
OSC▣Asgn) Number      Variation [ENTER]
Key= C 1    1[Clip 001]       1 to Edit
```



⓬ Check that note C1 is selected, then press the [ENTER] key. The Variation parameters for [Clip 001] will be displayed.

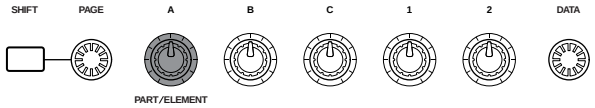
NOTE To return to the previous screen, press the [EXIT] key.




```
PCLP@Var)   Play    Start     Loop      End
(C 1) 1:    loop        0        0   236378
```

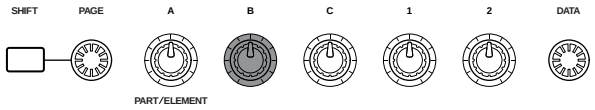
⓭ Use Knob [A] to select the Variation number. We will start with Variation 1.

```
PCLP@Var)   Play    Start     Loop      End
(C 1) 1:    loop        0        0   236378
```



⓮ As explained earlier (Page 54), the Play parameter specifies how the Phrase Clip is played back. There are three possible settings for this parameter, but we will select "reverse" here. Use Knob [B] to select.

```
PCLP@Var)   Play    Start     Loop      End
(C 1) 1: reverse        0        0   236378
```



Now press note C1 on the keyboard and check that the Phrase Clip has indeed been reversed.

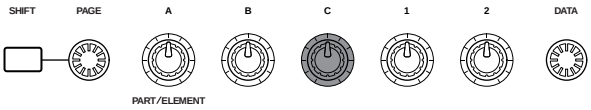
NOTE Reverse playback involves the sound being played in reverse from the End point to the Start point. You can change the length by simply adjusting these points. When you record a Phrase Clip, the Start point is initially set at the beginning of the recording and the End point at the end of the recording.

⓯ Press the [EXIT] key to return to the OSC Asgn (Oscillator Assign) screen. This time, select the D1 note and press the [ENTER] key.

⓰ Next, select Variation 2 but set the Play parameter to "loop" this time. When you press note D1 at this point, the Phrase Clip is simply played back as a loop between the Start and End points of the recording. If you only want one part of the Phrase Clip to be played back as a loop, you need to set the Start/Loop/End points. As an example, we will set a loop exactly one bar in length.

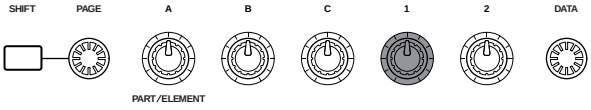
⓱ Use Knob [C] to set the Start point (the point at which playback will begin when you press a note). To create a 1-bar looped drum pattern, you need to press note D1 and adjust the Start point so that it matches up with the first beat in the bar.

```
PCLP@Var)   Play    Start     Loop      End
(D 1) 2:    loop   119120        0   236378
```



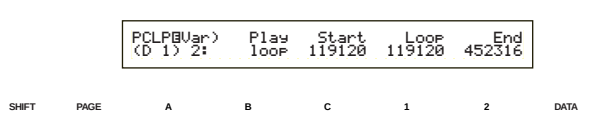
⓲ Use Knob [1] to set the Loop point (the start of the section to be looped). Since you will be creating a loop exactly one bar in length, the Loop point can be set to the same position as the Start point.

```
PCLP@Var)   Play    Start     Loop      End
(D 1) 2:    loop   119120   119120   236378
```



⓳ Use Knob [2] to set the End point (the end of the section to be looped). For a 1-bar drum pattern, you need to set the End point at the end of the fourth beat in the bar (i.e., immediately before the first beat of the next bar). Press note D1 and keep adjusting the End point until you find the ideal point for looped playback.

```
PCLP@Var)   Play    Start     Loop      End
(D 1) 2:    loop   119120   119120   452316
```



[Clip 001] is now reversed as Variation 1 and looped for one bar as Variation 2, and both Variations can be played by pressing notes C1 and D1. In the same way, you can change the points for Variations 3 to 8 and set up different loops to that of Variation 1/2.

Therefore, each Phrase Clip can be played back in a variety of ways according to different notes on the keyboard, and you can assign completely different Phrase Clips with different Variations to other notes. Such a collection of Phrase Clips and Variations is known as a "Clip Kit."

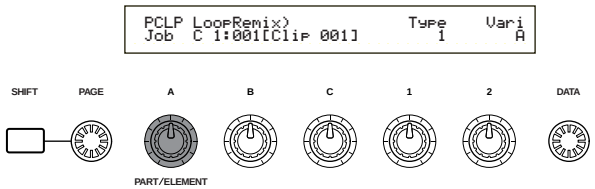
⓴ Next, press the [JOB] key to enter Phrase Clip Job Mode. We will now take a quick look at how to execute a Job.

Executing a Job

In Job Mode, you can perform various operations (Jobs) on your edited Phrase Clips. You can copy and delete items, create Variations, use Loop Remix and Extract to modify your Phrase Clips and so on. In this example, the totally unique Loop Remix feature will be explained. The explanation continues from step ⓴ above.

㉑ In Phrase Clip Job Mode, use the [PAGE] knob to switch to the PCLP LoopRemix screen. Loop Remix takes the data from an existing Phrase, changes it around, and creates a separate new, looped Phrase Clip. (The original Phrase Clip remains in its original state and a completely new Phrase Clip is created with Loop Remix.) By setting the Type and Vari parameters, you can easily create a variety of new Phrase Clips.

㉒ By pressing the respective note on the keyboard or by using Knob [A], you can select the source Phrase Clip to which Loop Remix will be applied. Let's select [Clip 001] as the source and create a new Phrase Clip. If you have followed the previous procedure and assigned Variations to the white notes between C1 and C2, you can press any of these notes; [Clip 001] will still be selected.

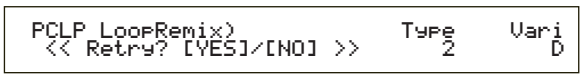


㉓ Use Knob [1] to set the Type parameter, which specifies the type of loop change (i.e., which part of the loop will be modified). Combined with the Vari parameter, it is possible to create a variety of loop patterns using Loop Remix. There are five Types in total, and we will use Type 2 here.

㉔ Use Knob [2] to set the Vari (Variation) parameter, which specifies the amount by which the loop will be modified. The four available Variations (A to D) apply increasing amounts of modification. Let's select "D" here in order to create the largest modification.

㉕ Press the [ENTER] key and you will see a confirmation message. Now press the [INC/YES] key to confirm and the Loop Remix will be executed on [Clip 001] using the Type and Vari parameters set earlier. To cancel the operation, press the [DEC/NO] key

After the Loop Remix operation has completed, you will see the following message.



At this point, you can press the note on the keyboard assigned to [Clip 001] and listen to the sound after Loop Remix has been applied. You should hear a completely new type of pattern, including reversed sections of sound.

However, if you are not satisfied with the result, you can repeat steps ㉓ to ㉕ and apply Loop Remix by pressing the [INC/YES] key at the present screen. By changing the combination of Type and Vari parameter settings, you should be able to create loop patterns that sound completely different.

㉖ Once you have a Phrase Clip that you are satisfied with, press the [DEC/NO] key at this screen and you will be returned to the PCLP LoopRemix screen.
The new Phrase Clip will have a new name and number, and be assigned to the keyboard in place of the original Phrase Clip (which is still retained in memory but is no longer assigned to notes).

NOTE Phrase Clips are retained in memory (DRAM) even after you exit Phrase Clip Mode, and until you switch the power off. However, if a Clip Kit has been created after editing or executing a Job, it will be lost when you exit Phrase Clip Mode. Therefore, you should always store your Phrase Clips before exiting this mode. Up to four Clip Kits can be stored in internal memory. Details about storing Phrase Clips are given on Page 160.

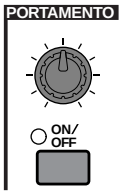
NOTE Once you have created a Clip Kit, you can play it in Phrase Clip Play Mode or use it as a Part in a Performance, just as with Voices (Page 129).

5 Other Useful Features

Portamento

Portamento is used to create a smooth transition in pitch from the first note played on the keyboard to the next, and can be used in Voice or Performance Mode. You can switch portamento on/off using the PORTAMENTO [ON/OFF] key on the front panel. When switched on, the PORTAMENTO [ON/OFF] key LED will be lit.

You can use the [PORTAMENTO] knob to vary the pitch transition time (Portamento Time). Turn the knob clockwise to lengthen the time.



NOTE Before enabling portamento, specify how portamento should work using parameters available in the Portamento screen (Page 84).

NOTE If Portamento is switched on and ready for use, the PORTAMENTO [ON/OFF] key LED will light when you select the Voice.

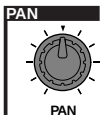
NOTE In Performance Mode, you can apply portamento to Voices of Parts that have their Layer Switch (Page 133) and Portamento switch set to “on” (Page 131).

NOTE Depending on the method of storage (Pages 116, 141), the portamento state (on/off) can be saved with the Voice or Performance.

NOTE You can set the portamento state in the Portamento screen (Pages 84, 131) in Voice or Performance Edit Mode.

Pan

You can use the [PAN] knob on the front panel to set the stereo position (pan) of the currently selected Voice, Performance or Clip Kit. The Pan parameter can be set in each Edit Mode, but the front panel [PAN] knob lets you adjust this parameter in real time in any of the Play Modes.



NOTE On the CS6R, this is set at the QED Level screen (Page 81).

Voice Edit

There are 256 Normal Voice presets and 8 Drum Voice presets. You can edit these to create new Voices, or build completely new Voices from scratch. You can then store up to 128 of these new/edited Normal Voices and up to 2 new/edited Drum Voices to internal user memory or external Memory Card.

The following procedure gives a basic idea about how to go about creating/editing Voices.

Of course, this is just one example; you are free to set any parameters in any way you like. Details about each parameter are given in the Reference section of this manual.

NOTE All parameter settings are stored along with the Voice itself.

❶ In Voice Play Mode, select the Voice you wish to edit.

❷ Enter Voice Edit Mode.

❸ In the Common Edit screens, set the parameters common to all Elements in the Voice (volume, pitch, tone, etc.) You can also set parameters related to the Arpeggiator, Controllers, Effects, and so on.

❹ At the OSC (Oscillator) screens, select the Waves used by the Elements in the Voice, plus the volume, pan, note range and other basic parameters.

❺ At the PCH (Pitch) and PEG (Pitch Envelope Generator) screens, set the tuning and other pitch-related parameters used by the Elements. Also set the PEG parameters as necessary.

❻ At the FLT (Filter) and FEG (Filter Envelope Generator) screens, adjust the parameters of the filters used by the Elements. Also set the FEG parameters as necessary.

❼ At the AMP (Amplitude) and AEG (Amplitude Envelope Generator) screens, set the volume and other output level-related parameters used by the Elements. Also set the AEG parameters as necessary.

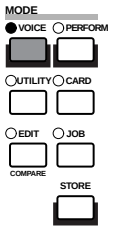
❽ At the LFO (Low Frequency Oscillator) screens, set the modulation-related parameters used by the Elements.

❾ At the EQ (Equalizer) screens, adjust the equalizer parameters affecting the tonal characteristics of the Elements.

❿ Store the edited Voice.

❶ Selecting a Voice to Edit

Enter Voice Play Mode by pressing the [VOICE] key.

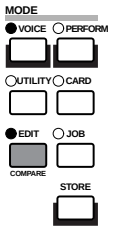


Select the Voice Number of the Voice you wish to edit (Page 75).

NOTE Before editing, first enter Voice Job Mode and copy the Voice you wish to edit to internal user memory. If you are creating a Voice from scratch, use the Initialize function to initialize a Voice in internal user memory. Details are given on Page 115.

❷ Entering Voice Edit Mode

Voice creation/editing is carried out in Voice Edit Mode.
To enter Voice Edit Mode, press the [EDIT] key while in Voice Play Mode.

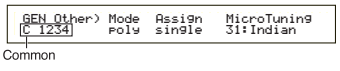


Common Edit and Element Edit

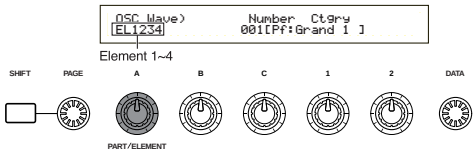
Each Voice consists of up to four Elements (Page 37). The parameters common to all four Elements are known as Common Edit parameters. Voice Edit Mode consists of Common Edit screens, plus screens for each individual Element's parameters.

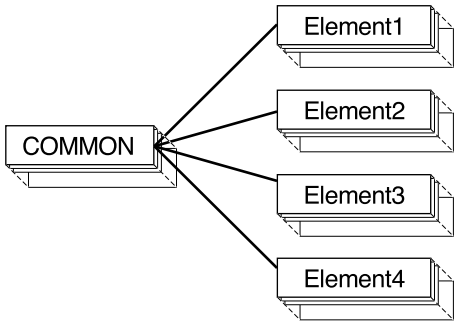
In Voice Edit Mode, you can use Knob [A] to switch between Common settings and settings for Elements 1 to 4.

Common settings



Settings for Elements 1 to 4

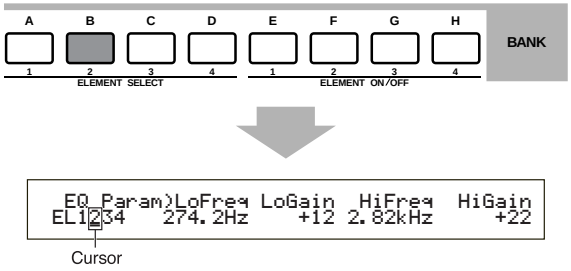




Selecting Elements (CS6x)

In Voice Edit Mode, you can select the Element to edit by pressing the respective ELEMENT SELECT key ([1] to [4]). When you select an Element, the cursor moves to the respective Element Number.

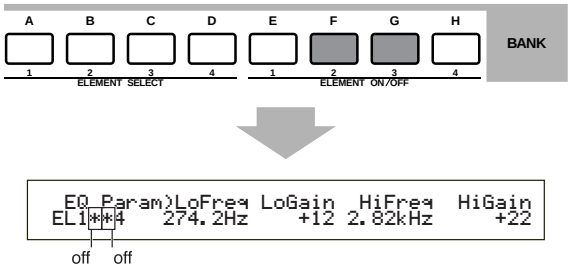
Example: When "Element 2" is selected



Switching Elements On/Off (CS6x)

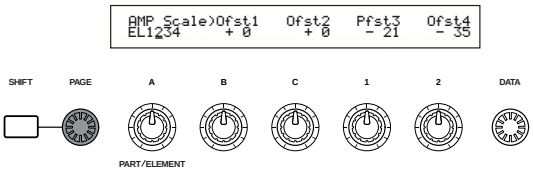
In Voice Edit Mode, an Element can be switched off when you press the respective ELEMENT ON/OFF key ([1] to [4]). This lets you temporarily mute other Elements in the Voice so that you can listen to the changes to the Element that you are editing. A muted (off) Element will be indicated as an asterisk (*) in the display as illustrated below.

Example: When Elements 2 and 3 are turned off

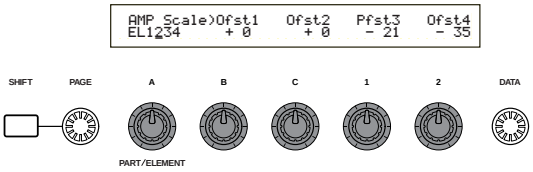


Switching Between Screens and Entering Settings

After selecting a Common Edit screen or a edit screen for an Element (1 to 4), use the [PAGE] knob to switch to other screens.

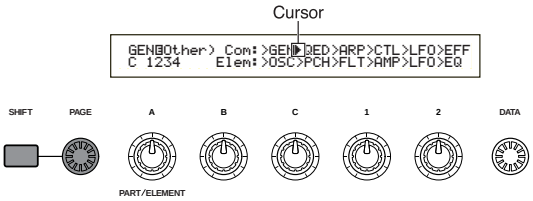


There are many parameters available within a screen. To make editing easier, the knobs below the LCD are assigned to each of the parameters in the screen.



Menu Screen

If you use the [PAGE] knob while holding down the [SHIFT] key, the settings menu will be displayed. Use the [PAGE] knob to move the cursor to an item and release the [SHIFT] key to jump to the screen for that item.



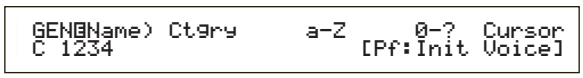
NOTE You can also use other knobs and keys to enter settings. The Compare featureallows you to compare the sound being edited against the sound prior to editing. Details are given on Pages 24, 79.

❸ Common Edit Screens

Each Voice consists of up to four Elements. Here, the parameters common to all Elements are explained.

• GEN (Common General)

Here, you can set general parameters in Common Edit, such as the Voice Name.



• QED (Common Quick Edit)
These parameters mostly control the volume and tone of the Voice and you can easily change the overall sound. Many of these parameters can be set directly using the Sound Control knobs on the front panel of the CS6x.

```
QED@Level)  Vol     Pan RevSend ChoSend
C 1234      127       C     127     127
```

• ARP (Common Arpeggio)
By setting these parameters, you can control how the Voice is arpeggiated. Details about how to use the Arpeggiator are given on Page 42.

```
ARP@Type)  Type    Tempo  Switch    Hold
C 1234 Up&Down1:Sq  120      on      on
```

• CTL (Common Controller)
You can assign various functions to the controllers on the front/rear panel. For example, you can assign parameters to the Pitch Bend Wheel and a Foot Controller so that you can change the tone of the Voice in real time. Details about various different uses are given on Page 47.

```
CTL@Set1)   Src     Dest     EL Sw  Depth
C 1234   FC(04) RevTime:EF1 1234    +63
```

• LFO (Common Low Frequency Oscillator)
These are the LFO parameters. The LFO uses a low frequency waveform to vary the pitch/filter/amplitude characteristics, and can be used to create vibrato, wah, tremolo and other effect (Page 85).

```
LFO@Wave)  Wave^v Speed KeyReset  Phase
C 1234     trpzd    63       on    270
```

• EFF (Common Effect)
These are the Effects parameters for the Voice. There are two Insertion Effects plus two System Effects (Reverb and Chorus).

```
EFF@InsEF)                    InsEF Connect
C 1234                        =1=2  ▶ 1=2
```

❹ OSC (Oscillator) Screens

In these screens, you can mainly set the parameters controlling the waveforms on which the Voice is based. You can select the Wave used for the Element, the volume and note range of each Element and so on.

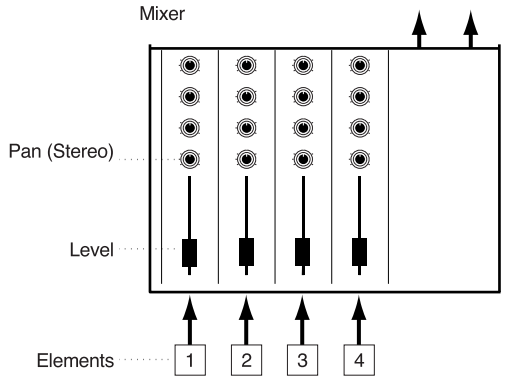
• OSC Wave
Select the waveform (Wave) used for each Element.

```
OSC@Wave)          Number  Ctgry
EL1234          001[Pf:Grand 1 ]
```

• OSC Out
• OSC Pan
Set the volume (output level) and stereo pan position of each Element. The following illustration shows the logic.

```
OSC@Out)  Level              Delay   InsEF
EL1234       96                  0    ins2
```

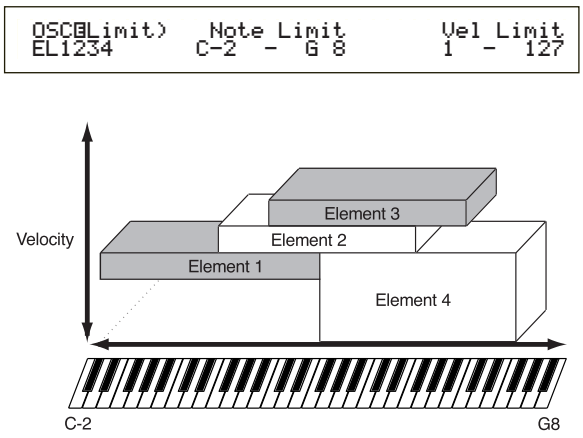
```
OSC@Pan)    Pan   Alter  Random   Scale
EL1234        C     L64      63     +63
```



• OSC Limit
Set the note range for each Element (the range of notes on the keyboard over which the Element will sound) and also the velocity response (the range of note velocities within which the Element will sound). You can assign different settings for each Element. With these parameters, you can layer Elements and control their output.

For example, you could set one Element to sound in an upper range of the keyboard, and another Element to sound in a lower range. Thus, even within the same Voice, you can have two different sounds for different areas of the keyboard or you can make the two Element ranges overlap so that their sounds are layered over a set range.

Furthermore, you can set each Element to respond to different velocity ranges so that one Element sounds for lower note velocities, whereas another Element sounds for higher note velocities.

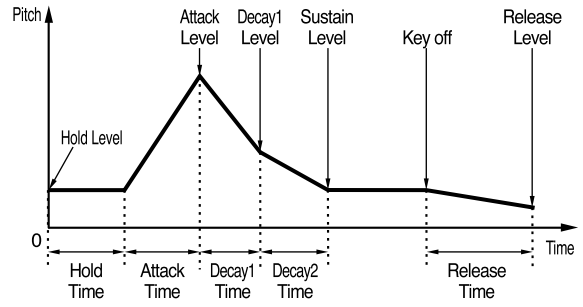


❺ PCH (Pitch) and PEG (Pitch EG) Screens

Set the basic pitch parameters for each Element. You can detune Elements, apply Pitch Scaling and so on. Also, by setting the PEG (Pitch Envelope Generator), you can control how the pitch changes over time.

• PEG (Pitch Envelope Generator)

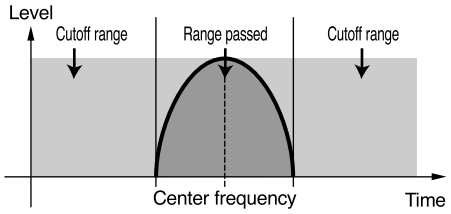
Using the PEG, you can control the transition in pitch from the moment a note is pressed on the keyboard to the point at which it is released. As illustrated below, the Pitch Envelope consists of five Time (transition speed) parameters and five Level (pitch) parameters. This is useful for creating automatic changes in pitch. Furthermore, different PEG parameters can be set for each Element.



NOTE Details about PEG parameters are given on Page 91.

❻ FLT (Filter) and FEG (Filter EG) Screens

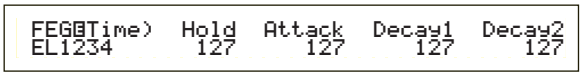
You can use the filter to change the tonal characteristics of each Element, by adjusting overtones (harmonic tones) included in the waveform from the Element. There are several types of filters, but its basic idea is similar. As illustrated below, the filter is used to pass overtones at specific frequencies and cut off (does not pass) others, to alter the harmonic factor of an original waveform. You can determine such frequencies by specifying a pointing or center frequency (cutoff frequency). With some filters, you can adjust signal levels at several frequency bands. You can also set the Filter Envelope Generator (FEG) for time variance of how the filter works, which results in a dynamic change in tonal characteristics. Here we introduce how FEG works.

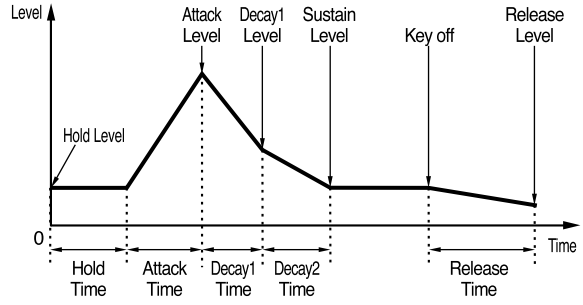


NOTE Details about Filter Types are given on Page 93.

• FEG (Filter Envelope Generator)

Using the FEG, you can control the transition in tone from the moment a note is pressed on the keyboard to the point at which it is released. As illustrated below, the Filter Envelope consists of five Time (transition speed) parameters and five Level parameters (for the amount of filtering). When you press a note on the keyboard, the cutoff frequency will change according to these envelope settings. This is useful for creating automatic wah effects, for example. Furthermore, different FEG parameters can be set for each Element.

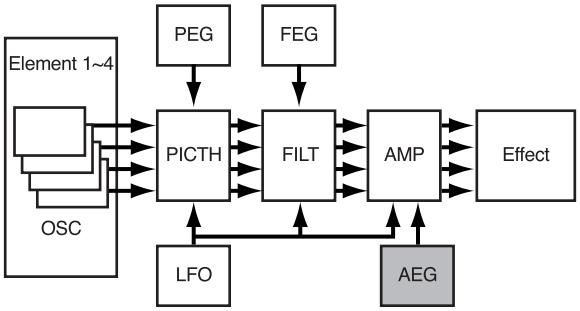




NOTE Details about FEG parameters are given on Page 95.

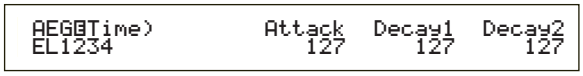
❼ AMP (Amplitude) and AEG (Amplitude EG) Screens

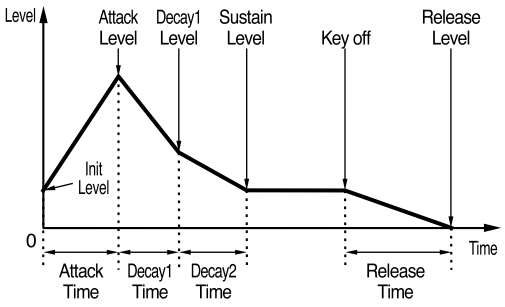
Set the volume of each Element after the OSC (Oscillator), PITCH and FILT (Filter) parameters have been applied, and also the final overall volume of the signal sent to the outputs. The signal of each Element is sent at the specified volume to the next Effect Unit.
Also, by setting the AEG (Amplitude Envelope Generator), you can control how the volume changes over time.



NOTE The final volume for all Elements is set in the Volume (Vol) parameter of the QED screen in Common Edit.

• Amplitude EG (Envelope Generator)
Using the AEG, you can control the transition in volume from the moment a note is pressed on the keyboard to the point at which it is released. As illustrated below, the Amplitude Envelope consists of five Time (transition speed) parameters and five Level parameters (for the amount of filtering). When you press a note on the keyboard, the volume will change according to these envelope settings. Furthermore, different AEG parameters can be set for each Element.

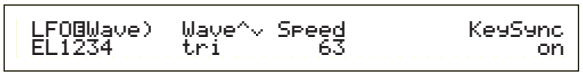


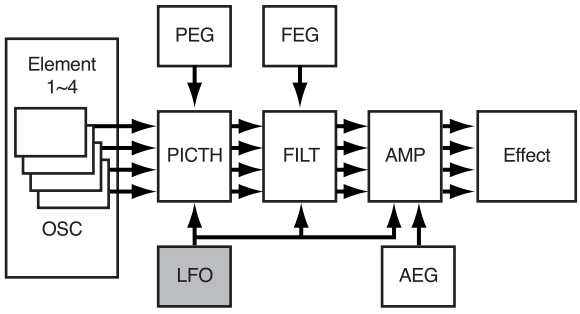


NOTE Details about AEG parameters are given on Page 98.

❽ LFO (Low Frequency Oscillator) Screens

As its name suggests, the LFO creates waveforms of a low frequency. These waveforms can be used to vary the pitch, filter or amplitude of each Element to create effects such as vibrato, wah and tremolo, although the actual available LFO parameters will vary according to the type of Element.



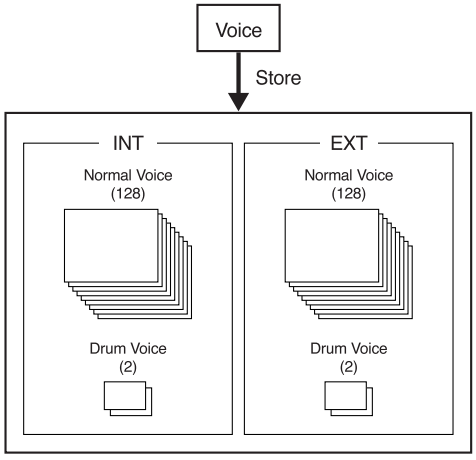


❾ EQ (Equalizer) Screens

Specific frequency bands for each Element can be attenuated or boosted using an equalizer. There are many types of equalizers available. Details are given on Page 101.

❿ Storing Edited Voices

Up to 128 new/edited Normal Voices and 2 new/edited Drum Voices can be stored to internal user memory or external Memory Card.



NOTE The maximum number of Plug-in Voices that can be stored to each internal memory (PLG1/2) is 64.

NOTE When storing a Voice, any existing data at the storage location will be lost. You should always back up important data to Memory Card, computer or some other storage medium beforehand.

Details about storing Voices are given on Page 116.

Effects

In the final stages of programming, you can set the effects parameters to further change the sound's character. To generalize, System Effects apply to the overall sound, whether it is a Voice, a Performance, a Song, etc. Insertion Effects, on the other hand, can be applied individually to each Voice. This synthesizer has two System Effect Units (Reverb and Chorus) plus two Insertion Effect Units. When using a Plug-in Board (PLG1 or PLG2) installed on the instrument, you can also use a separate Insertion Effect Unit that is dedicated for each Plug-in Part.

Different effects settings can be set per Voice (in Voice Mode) and per Performance (in Performance Mode), though the connection between the Effect Units will vary in each case.

Reverb Unit

The Reverb Unit includes a selection of 12 different reverb-type effects, including realistic simulations of the natural reverberation found in various halls and rooms. In Voice Mode, Reverb settings can be set for each Voice. In Performance Mode, the Reverb settings will apply to the Performance as a whole.

Chorus Unit

The Chorus Unit includes a selection of 23 chorus-type effects, including a flanger and others. Most of these effects are ideal for adding thickness to the sound.
In Voice Mode, Chorus settings can be set for each Voice. In Performance Mode, the Chorus settings will apply to the Performance as a whole.

Insertion Effects

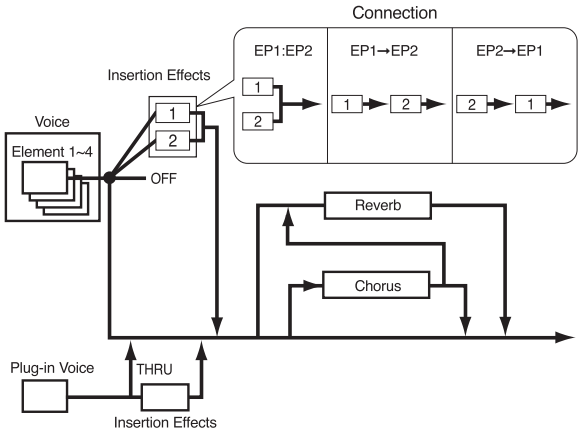
The Insertion Effect 1 Unit includes 24 effects including chorus, flanger and auto-wah. The Insertion Effect 2 Unit offers delays, reverbs, rotary speaker, amp simulation and other effects, providing a total of 92 effects. If a Plug-in Board has been installed, up to 24 Insertion Effects for the Plug-in Voices will also be available.

NOTE Details about each Effect Type are given in the Effect Type List in the separate Data List.

Effects in Voice Mode

In Voice Mode, you can set up the effect type and its value for each Effect Unit (Reverb, Chorus and Insertion Effects) and store them with each Voice. Furthermore, you can determine that each Element connects or bypasses the Insertion Effect Units. When you connect an Element to Insertion Effects, you can also specify the connecting way of two Units (series or parallel, as illustrated below). The combined signal from all Voice Elements — after application of the Insertion Effects — is sent to the Reverb and Chorus System Effect Units.

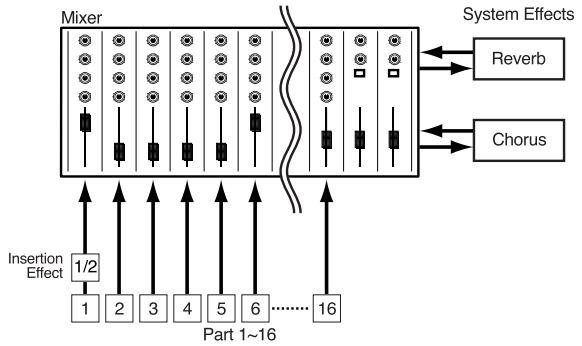
When you want to use Plug-in Voices from a Plug-in Board attached, you can also set up a dedicated Insertion Effect Unit for each Plug-in Voice. In this case, a Plug-in Voice signals processed with the Insertion Effect Unit will be then routed to Reverb and Chorus Units.



Effects in Performance Mode

In Performance Mode, you can use an Insertion Effects setting "borrowed" from ones respectively stored with Voices (Parts) . For Plug-in Parts, you can select and use an Insertion Effect setting "borrowed" from ones respectively stored with Plug-in Voices.
For Reverb and Chorus, you can create new settings dedicated for an entire Performance, without "borrowing" existing Reverb and Chorus settings stored with a Voice.

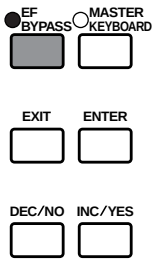
In the following illustration, a mixer represents the logic behind how the different effects are applied to the sound in Performance Mode. Each Part (1 to 16) is fed to the mixer through either Insertion Effect 1 or Insertion Effect 2. The signals for all Parts are summed in the mixer and then the System Effects (Reverb and Chorus) are applied to the mix as a whole.



Effect Bypass

You can temporarily switch effects off or on by pressing the [EF BYPASS] key. To use this function, you will need to specify the effect to be bypassed in the MSTR EF Bypass screen of Utility Mode (Page 164). You can also specify more than one effect.

When you press the [EF BYPASS] key, its LED will light and all Effects assigned to the currently selected Voice/Performance will be bypassed.



NOTE The Effect Bypass will also apply to Effects on Plug-in Boards other than the PLG100 series.

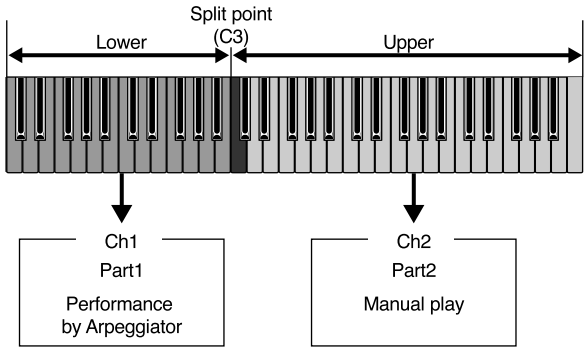
Using as a Master Keyboard (Performance Mode)

As previously explained, your Synthesizer provides several convenient features that you can make use of in a live show or the like. Here we introduce some examples to combine those features to meet your specific purposes.

The CS6x has special settings in Performance Mode so that you can use the instrument as MIDI master keyboard. You can activate the function (enable those special settings) when you press the [MASTER KEYBOARD] key on the panel (its LED will light). Now your instrument can send performance on the keyboard to an external tone generator, as well as the internal tone generator, according to the master keyboard settings in Performance Mode. If you divide the keyboard into several (up to four) key ranges and assign separate MIDI transmit channels, the keyboard can control multiple parts (channels) from the internal tone generator and external MIDI devices of those channels at the same time.
There are three Master Keyboard Modes (how to make key ranges) available: Split, 4 Zones, and Layer. You can learn these Master Keyboard Modes and their functional differences in the following examples.

Split

The illustration below shows an example of a Split configuration. Split is a typical setting to divide a keyboard into two key ranges (lower and upper) by splitting at a specific key note (split point). The following example is to split the keyboard at C3 note, enabling the lower range for automatic performance with Arpeggiator and the upper range for manual solo performance. You can make this configuration in the following steps.



NOTE Edit and prepare Voices for Arpeggiator and manual play in Voice Edit Mode before you set up a Split setting in the following procedure (page 78).

❶ Press the [PERFORM] key, followed by the [EDIT] key (each LED will light) to enter Performance Edit Mode. Then, press the [MASTER KEYBOARD] key to activate Master Keyboard Mode (its LED will light).

❷ Select "Common" using the Knob [A], then open the GEN M. Kbd (General Master Keyboard) screen using the [PAGE] knob.

```
GEN▣M. Kbd) Mode    Lower    Upper    Point
Common      split    ch01     ch02      C 3
```

NOTE Turning the [PAGE] knob while holding down the [SHIFT] key enables you to scroll though parameters in the Menu screens (page 121).

❸ Select "split" for the Mode parameter using the Knob [B].

NOTE If Master Keyboard Mode is deactivated (without the [MASTER KEYBOARD] key pressed), the Mode parameter value will be shown in brackets (like "(split)").

❹ Select the value (split point) for the Point parameter using the Knob [2], which determines the key note that divide the keyboard into two sections. Select "C3" for this example.

NOTE You can specify the split point by directly pressing a specific key on the keyboard while holding down the [SHIFT] key. In this example, press C3 while holding down the [SHIFT] key.

❺ Specify MIDI transmit channels respectively for the lower and upper key ranges using the Knob [C] (lower) and the Knob [1] (upper). These settings can make MIDI-channel-based separate controls of the internal tone generator or an external MIDI devices from the keyboard, such as using different Voice tones in the lower and upper key ranges.
Select "ch01" for "Lower" and "ch02" for "Upper" for this example.

NOTE You can also use the PROGRAM/PART [1] to [16] keys to select MIDI channels for the Lower and Upper ranges (Page 123).

❻ Select a Part for the lower range using the Knob [A]. For this example, select "Part01".

❼ Turn the [PAGE] knob and open the MIX Vce (Mix Voice) screen to select a Voice for Arpeggiator performance.

```
MIX▣Vce) Memory  Number  Ctgry   Search
Part01     PRE1:128(H16)[Pf:GrandPiano]
```

❽ Turn the [PAGE] knob and open the LYR Mode (Layer Mode) screen. Set "on" for "Arp" (Arpeggio switch). Select "1" for "RcvCh" (MIDI Receive Channel).

```
LYR▣Mode)  Mode     Arp   Layer   RcvCh
Part01     poly      on    off       1
```

❾Turn the [PAGE] knob and open the ARP Type (Arpeggio Type) screen. Set "on" for "Switch."

```
ARP(Type)  Type    Tempo  Switch    Hold
Part01   UpOct1:Sq  120      on      off
```

In steps ❻ to ❾, you now complete settings for the lower range for Arpeggiator performance. It will play in a Voice assigned to Part 1 based on MIDI Receive channel 1.

NOTE Refer to Page 82 for detailed settings of Arpeggiator.

NOTE You can copy (reuse) the arpeggio settings that belong to the Voice assigned to Part 1 (Page 141).

❿In the same manner, use Knob [A] to select Part02. Then select the solo instrument Voice at the MIX Vce screen and set the RcvCh (MIDI receive channel) parameter in the LYR Mode screen to "2." Now, the solo Voice for Part 2 will sound when playing notes at and above the Split point, or when receiving through MIDI channel 2.

NOTE The RcvCh parameter setting will be ignored if you set the Layer parameter in the LYR Mode screen to "on."

NOTE For Parts that you are not using, set their RcvCh parameters to something other than 1 or 2.

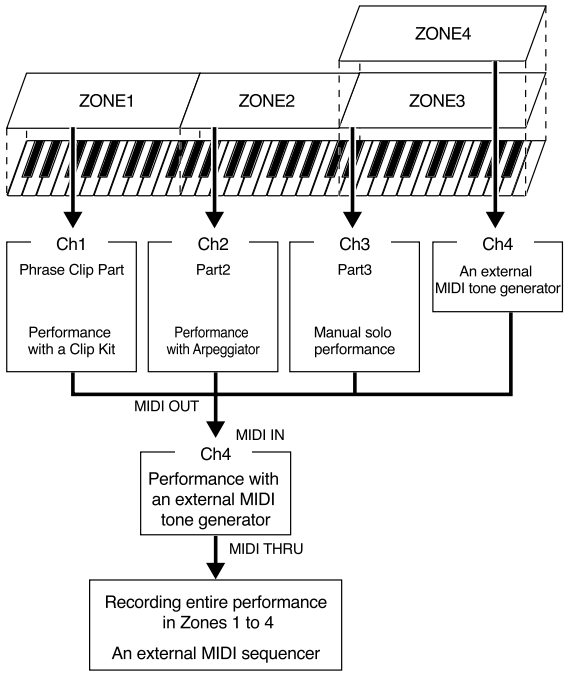
NOTE Further settings are available in Performance Edit Mode. If a Part does not sound, check the volume level and other settings for that Part. Details are given on Page 130.

⓫Before exiting Performance Edit Mode, store above settings in a Performance. For storing a Performance, refer to Page 141.

In Performance Play Mode, recall the Performance you have just stored. Simply pressing the [MASTER KEYBOARD] key activates or deactivates the Split configuration you made above.

4 Zones

The illustration below shows an example of a 4-zone configuration. A zone refers to a specific key range on the keyboard. You can logically divide a keyboard into up to four key ranges with separate MIDI channels and other associated settings so that you can control multiple Parts at the same time. A Split setting can divides the entire keyboard into two absolute sections (key ranges). In a 4-zone setting, however, each section can overlap to one another. You can even set a section to cover or include other sections.
The following example is to set Zone 1 for playing a rhythm loop created previously in Phrase Clip Mode (page 55), Zone 2 for performance by Arpeggiator, Zone 3 for manual solo performance, and Zone 4 for playing an external MIDI tone generator. Also in this settings, Zones 3 and 4 overlap in the same range, and entire performance in four all zones is output from the MIDI OUT connector so that you can record that performance on an external MIDI sequencer. You can make this configuration in the following steps.



NOTE Before you set up a 4-zone configuration in the following procedure, edit and prepare necessary Voices (for Arpeggiator and manual play) and Phrase Clip Kit in their associated Edit Modes.

❶Press the [PERFORM] key, followed by the [EDIT] key (each LED will light) to enter Performance Edit Mode. Then, press the [MASTER KEYBOARD] key to activate Master Keyboard Mode (the LED will light).

❷Select "Common" using the Knob [A], then open the GEN M. Kbd (General Master Keyboard) screen using the [PAGE] knob.

```
GEN(M. Kbd) Mode   Lower   Upper   Point
Common      split   ch01    ch02     C 3
```

NOTE Turning the [PAGE] knob while holding down the [SHIFT] key enables you to scroll though parameters in the Menu screens (Page 121).

❸Select "4zone" for the Mode parameter using the Knob [B].

NOTE If Master Keyboard Mode is deactivated (without the [MASTER KEYBOARD] key pressed), the Mode parameter value will be shown in brackets (like "(4zone)").

❹Select one of "Zone01" to "Zone04" using the Knob [A]. As we have selected "4zone" for the Mode parameter, you can now select setting screens for four Zones. Select "Zone01" to get started with the settings.

```
MKB(Transmit)    TrnsCh     TG     MIDI
Zone01             Ch01     on       on
```

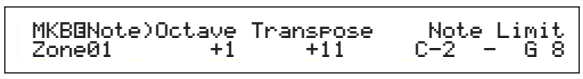
NOTE You can also use the BANK [A] to [D] keys to respectively select "Zone01" to "Zone04."

Selecting a Zone opens the MKB Transmit screen. You may want to select a sub screen to set up a Zone using the [PAGE] knob. But you first specify basic items in the MKB Transmit screen, such as MIDI transmit channel, enabling or disabling MIDI output to the internal tone generator and to the MIDI OUT connector.

❺ Set MIDI transmit channel (TrnsCh) to "Ch01" using the Knob [C]. Set MIDI output to the internal tone generator (TG) and MIDI OUT (MIDI) both to "on."
These settings can differentiate each Zone from one another, to internally or externally output performance made in each Zone using a separate MIDI channel. Finally, you will separately control sound tones from four zones.

To do this, set "Ch01" to "Ch04" respectively to the "TrnsCh" parameters in the MKB Transmit screens for Zones 1 to 4. For the "TG" and "MIDI" parameters, set both "on" for Zones 1 to 3. For Zone 4, set "off" to "TG" and "on" to "MIDI." You can switch between multiple MKB Transmit screens using the Knob [A]. Some of basic settings for four zones are now complete.

❻ Select "Zone01" again using the Knob [A]. Open the MKB Note screen using the [PAGE] knob. In this screen, you can specify a key range for a Zone.



NOTE In the MKB Note screen, you can also find other parameters such as Note Limit, Transpose, etc. Refer to Page 138 for more information about these parameters.

❼ Set "Note Limit" (zone key range) with the lowest and highest notes using Knobs [1] (lowest) and [2] (highest). For "Zone01", select "C-2" for the lowest note and "B1" for the highest.

❽ Use the Knob [A] to switch to the MKB Note screen for "Zone02". As in the same manner in step ❼, select "C2" for the lowest note and "B2" for the highest.

❾ Use again the Knob [A] to switch to the MKB Note screen for "Zone03". As in the same manner in step ❼, select "C3" for the lowest note and "G8" for the highest.

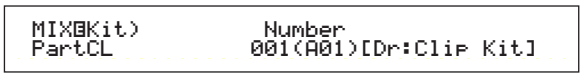
❿ Use the Knob one more time [A] to switch to the MKB Note screen for "Zone04". As in the same manner in step ❼, select "C3" for the lowest note and "G8" for the highest. Note that this key range setting will make a overlapped range with Zone 3.

NOTE For detailed settings of a Zone, refer to Page 137.

⓫ Turn the Knob [A] and select a Part for a Zone. In this example, we select Phrase Clip Part for Zone 1, Part 2 and Part 3 respectively for Zone 2 and Zone 3. We don't select any internal Part for Zone 4 since Zone 4 is set only to output performance information via the MIDI OUT connector. First, select Phrase Clip Part (PartCL) for Zone 1.

NOTE You can also use the MEMORY or PROGRAM/PART keys to select a Part for a Zone (Page 119).

⓬ Use the [PAGE] knob and open the MIX Kit screen, to set up a Clip Kit for performance using Phrase Clips.



NOTE A necessary Phrase Clip Kit should be prepared in Phrase Clip Mode before you use in this setting in Performance Mode.

⓭ Use the [PAGE] knob and open the Layer Mode (LYR Mode) screen. Set Layer Switch (Layer) to "off," MIDI receive channel (RcvCh) to "1."

With settings made in steps ⓫ to ⓭, you can now play Phrase Clips from the Clip Kit assigned to "PartCL" (Phrase Clip Part) set to MIDI receive channel 1 (RcvCh) when you play in the key range of Zone 1.

⓮ As in the same manner in steps ⓫ to ⓭, set up for Zone 2. Turn the Knob [A] and select "Part02". Next go to the MIX Vce (Mix Voice) screen using the [PAGE] knob, and select a Voice for Arpeggiator. Then, use the [PAGE] knob to open the LYR Mode (Layer Mode) screen and set RcvCh (MIDI receive channel) to "2". Also in this screen, set the "Arp" switch to "on" for Arpeggiator performance. Finally in the ARP Type (Arpeggio Type) screen, set the Switch parameter to "on". With settings made here, you can now play with Arpeggiator using a Voice assigned to "Part02" set to MIDI receive channel 2 (RcvCh) when you play in the key range of Zone 2.

⓯ As in the same manner in steps ⓫ to ⓭, set up for Zone 3. Turn the Knob [A] and select "Part03". Next go to the MIX Vce (Mix Voice) screen using the [PAGE] knob, and select a Voice for manual solo performance. Then, use the [PAGE] knob to open the LYR Mode (Layer Mode) screen and set the RcvCh (MIDI receive channel) to "3".
With settings made here, you can now play solo using a Voice assigned to "Part03" set to MIDI receive channel 3 (RcvCh) when you play in the key range of Zone 3.

You don't need to make further settings for Zone 4 since it is not intended for an internal Part and has already been set to output performance information via the MIDI OUT connector in steps ❺ to ❿. The key range of Zone 4 matches to that of Zone 3 so that solo performance made in that range will be sent on MIDI channels 3 (from Zone 3) and 4 (from Zone 4) via MIDI OUT to an external MIDI device.

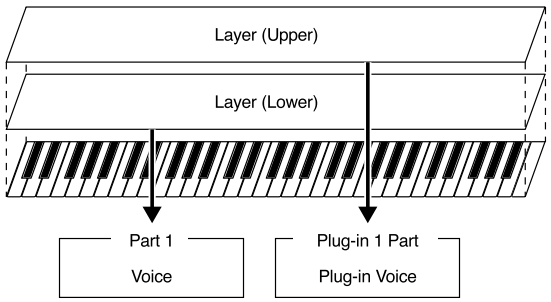
NOTE You can set additional Part settings in Performance Edit Mode. If you have a trouble possibly associated with these settings, such as no sound from a specific Part, confirm any Part settings related to volume, etc. Refer to Page 130 for more information about Part settings.

⓰ Before exiting Performance Edit Mode, store above settings in a Performance. For storing a Performance, refer to Page 141.

In Performance Play Mode, recall the Performance you have just stored. Simply pressing the [MASTER KEYBOARD] key activates or deactivates the 4-Zone configuration you made above.

Layer

The illustration below shows an example of a Layer configuration. Layer refers to two separate Parts with a overlapped key range, enabling to play unison with these Parts. The following example is to play unison with Voices selected for Part 1 and Plug-in 1 Part. You can make this configuration in the following steps.



NOTE Before you set up a Layer configuration in the following procedure, edit and prepare necessary Voices for layers in associated Edit Modes.

NOTE Plug-in Voices are available only when you attach an optional Plug-in Board (Page 108).

❶ Press the [PERFORM] key, followed by the [EDIT] key (each LED will light) to enter Performance Edit Mode. Then, press the [MASTER KEYBOARD] key to activate Master Keyboard Mode (its LED will light).

❷ Select "Common" using the Knob [A], then open the GEN M. Kbd (General Master Keyboard) screen using the [PAGE] knob.

```
GEN▣M. Kbd) Mode    Lower    Upper    Point
Common      split    ch01     ch02      C 3
```

NOTE Turning the [PAGE] knob while holding down the [SHIFT] key enables you to scroll though parameters in the Menu screens (Page 121).

❸ Select "layer" for the Mode parameter using the Knob [B].

NOTE If Master Keyboard Mode is deactivated (without the [MASTER KEYBOARD] key pressed), the Mode parameter value will be shown in brackets (like "(layer)").

❹ Use Knobs [C] and [1] to respectively set MIDI transmit channels for the Lower and Upper parameters. Note that Lower and Upper refer to two Parts (Zones) to be layered together. These channel settings can create and send performance information on two separate channels to the internal tone generator and an external MIDI device via the MIDI OUT connector. Here we set "Ch01" for "Lower" and "Ch02" for "Upper."

NOTE You can also use the PROGRAM/PART keys [1] to [16] to select MIDI channels for the Lower and Upper Parts (Page 123).

❺ Turn the Knob [A] and select a Part. First select "Part01" for the Upper Part.

❻ Use the [PAGE] knob and open the MIX Vce (Mix Voice) screen. Select a Voice for the Upper Part.

```
MIX▣Vce) Memory  Number  Ctgry   Search
Part01     PRE1:128(H16)[Pf:GrandPiano]
```

❼ Use the [PAGE] knob to open the LYR Mode (Layer Mode) screen. Set the Layer (Layer Switch) to "off" and the RcvCh (MIDI Receiving Channel) to "1."

```
LYR▣Mode)  Mode     Arp   Layer   RcvCh
Part01     poly      on    off       1
```

NOTE If other Parts' RcvCh (MIDI receive channels) are set to the same ones assigned to two Parts, those Parts will also sound when you play on the keyboard. This might be troublesome if you simply need two layered Parts. To mute unnecessary Parts while you play on the keyboard, set "RcvCh" for those Parts to "off." You can only play Voices from layered Parts.

❽ As in the same manner in steps ❺ to ❼, set up for the Upper Part. Select "PartP1" for the Lower Part, go to the MIX Vce (Mix Voice) screen using the [PAGE] knob, and select another Voice (Plug-in Voice) for the Lower Part. Also, go to the LYR Mode (Layer Mode) screen to set the Layer (Layer Switch) to "off" and the RcvCh (MIDI Receiving Channel) to "2."

NOTE You can set additional Part settings in Performance Edit Mode. If you have a trouble possibly associated with these settings, such as no sound from a specific Part, confirm any Part settings related to volume, etc. Refer to Page 130 for more information about Part settings.

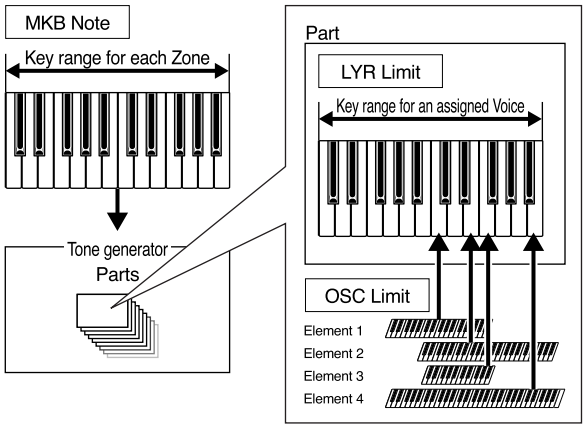
❾ Before exiting Performance Edit Mode, store above settings in a Performance. For storing a Performance, refer to Page 141.

In Performance Play Mode, recall the Performance you have just saved. Simply pressing the [MASTER KEYBOARD] key activates or deactivates the Layer configuration you made above.

NOTE Besides the Layer/Zone configuration in Master Keyboard Modes, you can use the Layer (Layer Switch) for each Part to make a Layer configuration that consists of up to four Parts (Page 133).

About Note Limit (Key Range)

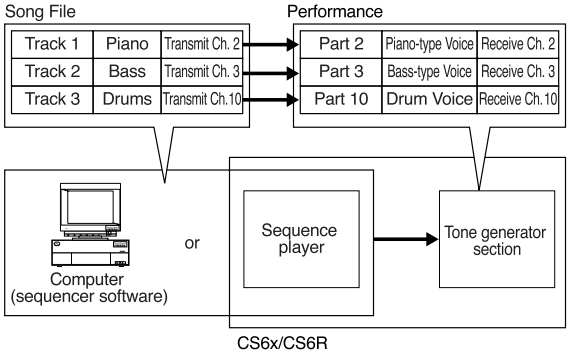
Note Limit setups are provided for setting Master Keyboard Mode, Part , and Voice. They are associated to one another as follows.



While using in Master Keyboard Mode, you can control the internal tone generator (or an external MIDI device) according to "Note Limit" in the MKB Note screen. If you limit a Zone's key range to two octaves, it is as if you connect an external two-octaves keyboard controller to play with the tone generator. Meanwhile, the key range (playable range) of an entire Voice is determined by "Note Limit" in the LYR Limit screen (page 133) for a Part assigned with that Voice. Such a playable range of each Element of a Voice is determined by "Note Limit" in the OSC Limit screen (page 90) available in Voice Edit Mode.

Using as a Multitimbral Tone Generator (Performance Mode)

Performance Mode lets you use your synthesizer as a multitimbral tone generator for use with computer-based music software or external sequencers. If each track in a song file uses a different MIDI channel, then the Parts in a Performance can be each assigned to those MIDI channels correspondingly. Therefore, you can play back a song file on an external sequencer and have different Voices playing on different tracks simultaneously.
In the following example, we will create a Performance suited to playing back a song file consisting of three Parts: piano, bass and drums. The piano track is assigned to MIDI channel 2, the bass track to channel 3, and the drums to channel 10.



NOTE The synthesizer's internal sequencer can be used to play back the song file. The included XGworks(lite) computer sequencer software can also be used for this, though you need to make sure that the computer has been connected to your synthesizer correctly (Page 16).

❶ After pressing the [PERFORM] key, press the [EDIT] key (the respective LEDs will light). You are now in Performance Edit Mode.

NOTE Before entering Performance Edit Mode, you need to select a Performance for editing. Also make sure that the [MASTER KEYBOARD] key LED is not lit.

❷ Use Knob [A] to select Parts. Here, you can select Part 2 for the piano, Part 3 for bass and Part 10 for drums. First, we will select Part02.

❸ Use the [PAGE] knob to switch to the MIX Vce (Mix Voice) screen, then specify the Voice to be used as the piano Part.

```
MIX▣Vce) Memory  Number  Ctgry   Search
Part02     PRE1:128(H16)[Pf:GrandPiano]
```

❹ Next, use the [PAGE] knob to switch to the Mix Level screen, then set the volume for the piano Part as well as, if necessary, its pan position, chorus and reverb Send levels. Details are given on Page 130.

❺ Continue using the [PAGE] knob and switch to the LYR Mode (Layer Mode) screen. Set the Mode parameter to "poly" (polyphonic), the Layer parameter to "off," and the RcvCh parameter (MIDI receive channel) to 2.

```
LYR▣Mode)  Mode     Arp    Layer   RcvCh
Part02     poly      on     off       2
```

NOTE For Parts that do not require polyphony, the Mode parameter can be set to "mono" (monophonic).

By following steps ❷ to ❺ above, when you play back a song file in the sequencer, the piano track is transmitted through MIDI channel 2. The MIDI data is received by the synthesizer which then plays the Voice for the Part assigned to MIDI channel 2.

❻ Repeat steps ❷ to ❺ above, but set up Part 3 for bass and to receive on MIDI channel 3.

❼ Repeat steps ❷ to ❺ again, setting up Part 10 for drums and to receive on MIDI channel 10.

NOTE To avoid situations where the Voices of unused Parts are suddenly played back, you should set the MIDI receive channels for unused Parts to "off."

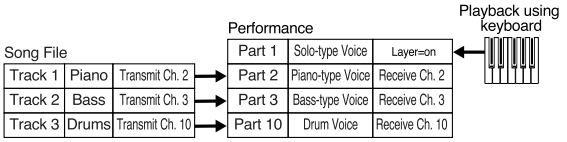
NOTE There are many other Part-specific parameters in Performance Edit Mode. Details are given on Page 121.

❽ Before exiting Performance Edit Mode, you need to store the settings for the Performance. Details about storing Performances are given on Page 141.

Now, when you select this Performance in Performance Play Mode, you can play back the song file on computer (sequencer) or internal sequencer, and the piano, bass and drum Parts will be played back according to each track's MIDI channel.

Performing Live while Playing Back a Song File

While playing back the song file with the piano, bass and drum Parts assigned earlier, you can set up the Performance so that you can also play another Part live.


Song File
Track 1 Piano Transmit Ch. 2
Track 2 Bass Transmit Ch. 3
Track 3 Drums Transmit Ch. 10
Performance
Part 1 Solo-type Voice Layer=on
Part 2 Piano-type Voice Receive Ch. 2
Part 3 Bass-type Voice Receive Ch. 3
Part 10 Drum Voice Receive Ch. 10
Playback using keyboard

This is the same as the Performance created earlier, but with the addition of another Part for live playback. Regarding settings, the important points are as follows.

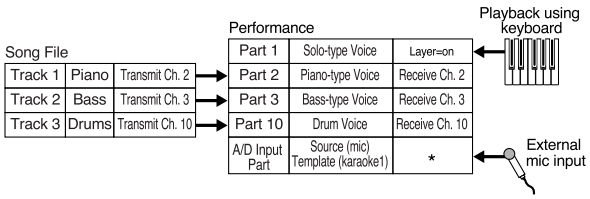
- In the Performance created earlier, Parts 2, 3 and 10 were being used. As an example, we will now assign another Part (Part 1) to a solo-type Voice.
- At the LYR Mode screen, set the Layer parameter for Part 1 to "on," and make sure it is set to "off" for Parts 2, 3 and 10.

  NOTE If you want to manually play multiple (up to four) Parts using some Voices from Parts 4 to 9, 11 to 16 and Plug-in Parts, set those Parts' Layer Switch parameters to "on."

- At the GEN MIDI screen, set the LayerCh (Layer Channel) parameter to BasicCh.
  The Voice for Part 1 can now be played live using the keyboard.

Using the A/D Input Part

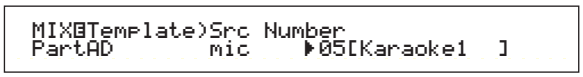
If you have external sources (such as a microphone or other audio equipment) connected to the synthesizer's A/D INPUT jack, you can use them as Parts in a Performance.
Continuing with our example, you can add another Part for vocals by assigning the A/D Input Part. Therefore, while the song is playing back the piano, bass and drums, you simultaneously play a solo live and sing into the microphone. Effects such as reverb can be added to the A/D Input Part (Pages 130 and 137), so you can assign an effect suited to the vocals for the song. These effect settings will also be saved with the Performance.


Song File
Track 1 Piano Transmit Ch. 2
Track 2 Bass Transmit Ch. 3
Track 3 Drums Transmit Ch. 10
Performance
Part 1 Solo-type Voice Layer=on
Part 2 Piano-type Voice Receive Ch. 2
Part 3 Bass-type Voice Receive Ch. 3
Part 10 Drum Voice Receive Ch. 10
A/D Input Part
Source (mic) Template (karaoke1)
*
Playback using keyboard
External mic input

* You need to set the receive channel to control the A/D Input Part parameters via MIDI. However, this is not vital in this example.

Regarding settings, the important points are as follows.

- Switch to the PartAD (A/D Input Part) parameters and set the external input source and template at the MIX Template screen.



  There are 13 templates available already with a variety of gain and effects settings for you to select from according to the input source. Here, we will be using the A/D Input Part for vocals so let's set the Src (Source) parameter to "mic" and the Number (Template Number) parameter to "Karaoke1."

  ⚠ If you choose the wrong type of input source, you may possibly damage your hearing and/or any connected audio equipment. Make sure you set this parameter correctly.

- Turn the [GAIN] knob (Page 11) all the way down, then connect a microphone to the A/D INPUT jack (MIC/LINE2 jack).
- Turn the [GAIN] knob back slowly while singing/talking into the microphone until you reach an ideal volume level.

NOTE There are other settings for controlling the A/D Input Part via MIDI. Details are given on Page 132.

NOTE When you play a song file bearing the XG/GM logo (available in the market), you may want to install an optional XG Plug-in Board on the instrument, to enjoy a best playback quality with a wide variety of Voices and Effects. Note that you can install an additional XG Plug-in Board to double polyphonic notes and Effects. In such cases, you do not only enjoy the playback of a song, but also can mute a specific Part from the song file for a "minus-one" setting, which is convenient for practice of solo performance or karaoke.

NOTE If you install the optional Effect Plug-in Board (PLG100-VH), you can create harmonies of up to three notes for your vocals. By assigning the harmony channel to the keyboard's MIDI transmit channel, you can create vocoder-like effects. Or you could play back a harmony line using a sequencer to create a backing chorus for your vocals.

Voice Mode

Voice Play

This mode is used for playing individual voices stored as 256 on-board presets, as well as the Internal (User) Voices, External Voices on Memory Card, and Plug-in Board Voices (optional). This section explains how to select and play voices.

NOTE Details about the Voice types and the Voice Memories are given on Page 36.

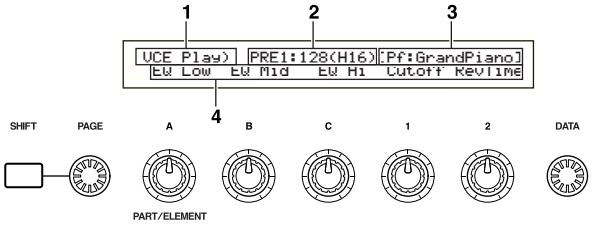
Voice Play Mode Display

The LCD will display the following in Voice Play Mode. Voice Play Mode consists of 2 screens and the [PAGE] knob can be used to switch to the Voice Search screen.

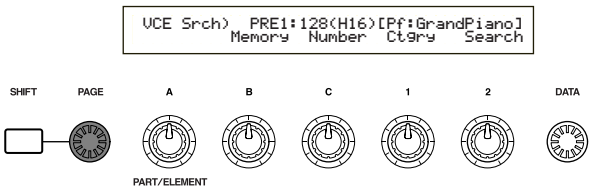
The contents of each screen are as follows. See page 77 for details about the Voice search screen.

NOTE Details about how to enter Voice Play Mode are given on Page 21.

Voice Play Mode



2nd Screen : Voice Search



1.Screen Title

This shows that you are currently in Voice Play Mode.

2.Voice Memory/Number (Bank/Number) Display

Shows the Memory/Voice Program Number (001 to 128) or Bank ([A] to [H])/Program Number ([1] to [16]). For example, in the display shown above, "PRE1:128(H16)" means that the Memory is Preset 1, the voice Program Number is 128, the Bank is H and the Program Number within the Bank is 16.

Memory/Voice Program Number

PRE1 refers to Preset 1, PRE2 to Preset 2, PRE to Preset Drums, INT to Internal, EXT to External, PLG1 to Plug-in Board 1 and PLG2 to Plug-in Board 2. All voice Program Numbers within each memory fall in the range 001 to 128. Drum Voices are DR1 to DR8.

NOTE Details about Voice Memories are given on Page 36.

Bank/Program Number

Voice Program Numbers 001 to 128 correspond with Banks A to H and Program Numbers 01 to 16. Therefore, you can cycle through Voice Program Numbers 001 to 128 sequentially, or you can select them randomly using a combination of BANK and PROGRAM keys. The relationship between Banks/Program Numbers and Voice Program Numbers is given below.

Voice Program Number	Bank	Program Number	Voice Program Number	Bank	Program Number
001	A	1	065	E	1
002	A	2	066	E	2
003	A	3	067	E	3
004	A	4	068	E	4
005	A	5	069	E	5
006	A	6	070	E	6
007	A	7	071	E	7
008	A	8	072	E	8
009	A	9	073	E	9
010	A	10	074	E	10
011	A	11	075	E	11
012	A	12	076	E	12
013	A	13	077	E	13
014	A	14	078	E	14
015	A	15	079	E	15
016	A	16	080	E	16
017	B	1	081	F	1
018	B	2	082	F	2
019	B	3	083	F	3
020	B	4	084	F	4
021	B	5	085	F	5
022	B	6	086	F	6
023	B	7	087	F	7
024	B	8	088	F	8
025	B	9	089	F	9
026	B	10	090	F	10
027	B	11	091	F	11
028	B	12	092	F	12
029	B	13	093	F	13
030	B	14	094	F	14
031	B	15	095	F	15
032	B	16	096	F	16
033	C	1	097	G	1
034	C	2	098	G	2
035	C	3	099	G	3
036	C	4	100	G	4
037	C	5	101	G	5
038	C	6	102	G	6
039	C	7	103	G	7
040	C	8	104	G	8
041	C	9	105	G	9
042	C	10	106	G	10
043	C	11	107	G	11
044	C	12	108	G	12
045	C	13	109	G	13
046	C	14	110	G	14
047	C	15	111	G	15
048	C	16	112	G	16
049	D	1	113	H	1
050	D	2	114	H	2
051	D	3	115	H	3
052	D	4	116	H	4
053	D	5	117	H	5
054	D	6	118	H	6
055	D	7	119	H	7
056	D	8	120	H	8
057	D	9	121	H	9
058	D	10	122	H	10
059	D	11	123	H	11
060	D	12	124	H	12
061	D	13	125	H	13
062	D	14	126	H	14
063	D	15	127	H	15
064	D	16	128	H	16

3.Voice Category/Name

Voice Category

The two characters to the left of the Voice Name denote the category of instrument or sound to which the voice belongs.

NOTE Details about Category names are given on Page 80.

Voice Name

This consists of up to 10 characters.

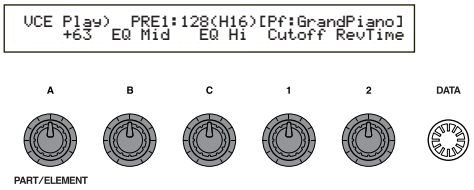
4.Knob Parameter Display

This shows the function assigned to each knob ([A] to [C] and [1]/[2]).

NOTE Knobs [1]/[2] may be assigned with several parameters (destinations) from multiple control sets. In this case, the display will show the parameter (destination) from a control set of the smallest number.

Knob Parameter Settings

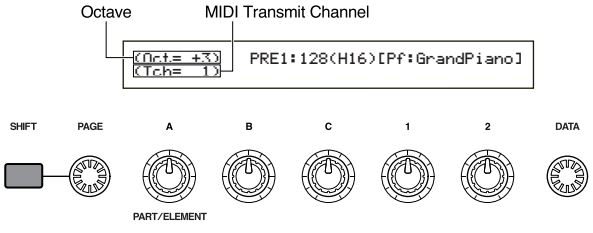
In Voice Play Mode, each knob ([A] to [C] and [1]/[2]) can be used to adjust the parameter assigned to it. The parameter value is displayed briefly when you move each knob.



NOTE Details about assigning parameters to Knobs [A] to [C] are given on Pages 50, 165. Details about assigning parameters to Knobs [1]/[2] are given on Pages 51, 84.

Octave and MIDI Transmit Channel Settings

In Voice Play Mode, the Octave and MIDI Transmit Channel are shown when pressing the [SHIFT] key.



This lets you set the MIDI Transmit Channel by turning Knob [A] and holding down the [SHIFT] key. The settings for Voice Play Mode are transmitted on this MIDI channel.

NOTE The MIDI Transmit Channel can also be set in the MIDI Ch screen of Utility Mode (Page 166).

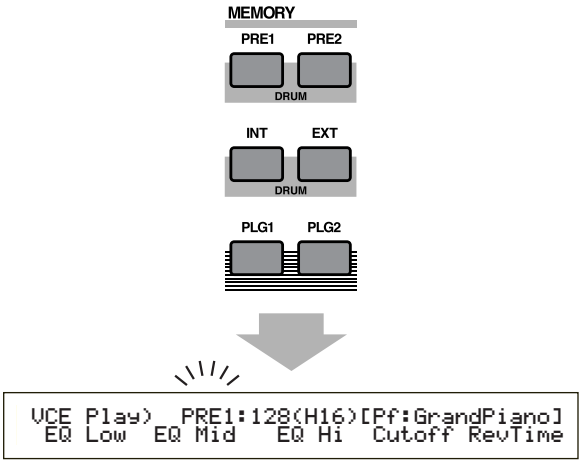
Voice Program Selection

There are four ways in which you can choose a Voice.

- Using the BANK/PROGRAM keys (CS6x)
- Using the [DEC/NO] and [INC/YES] keys
- Using the [DATA] knob
- Using the Category Search

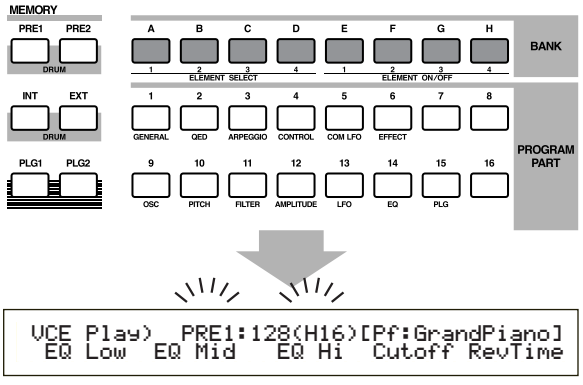
Using the BANK/PROGRAM Keys (CS6x)

❶ Press a MEMORY key to select a Voice Memory. The Voice Memory indicator in the LCD will blink.



NOTE Details about Voice Memories are given on Pages 27, 36.

❷ Press a BANK key ([A] to [H]) to select a Bank. The Bank indicator in the LCD will blink.

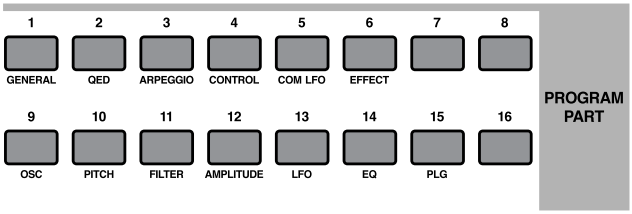


NOTE If you press the [EXIT] key here, the Voice selection process is canceled and the original Voice is reinstated.

NOTE If the Bank has already been selected, this step is not required. Details about Banks are given on Pages 27, 36.

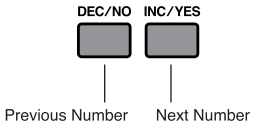
❸Press a PROGRAM key ([1] to [16]) to select a Program Number.

Voices can be selected by setting the Memory, Bank and Program Number as explained in the three steps given above. The LCD also displays the selected voice.


1 2 3 4 5 6 7 8
GENERAL QED ARPEGGIO CONTROL COM LFO EFFECT
9 10 11 12 13 14 15 16
OSC PITCH FILTER AMPLITUDE LFO EQ PLG
PROGRAM PART

Using [INC/YES] and [DEC/NO] Keys

Press the [INC/YES] key to select the next Voice and the [DEC/NO] key to select the previous one.

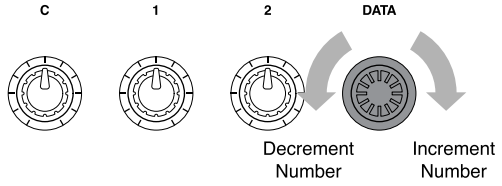


The voice is selected by pressing just the [INC/YES] or [DEC/NO] key. This method is useful when selecting a Voice that is located near the currently selected Voice.

The method can also be used to switch to the next or previous Bank. For example, if the current Voice is A16, Voice B01 is selected by pressing the [INC/YES] key. Similarly, if the current Voice is H01, Voice G16 is selected by pressing the [DEC/NO] key.

Using the Data Knob

Turn the [DATA] knob clockwise to increment the currently selected Voice number, or anti-clockwise to decrement it.



The Voice is selected directly and sequentially.

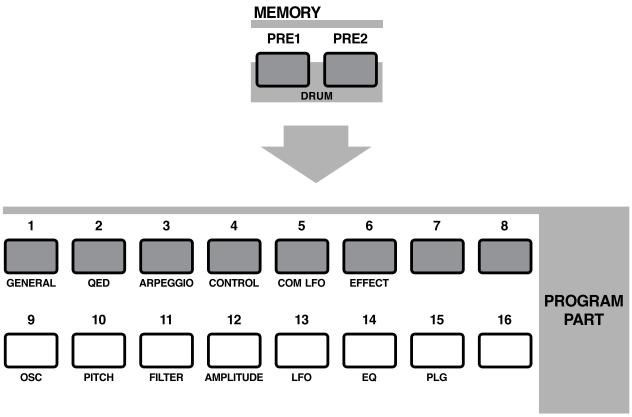
Just as with the [INC/YES] and [DEC/NO] keys, this method can be used to switch to the next or previous Bank.

Selecting Drum Voices

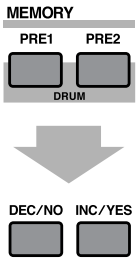
The procedure for selecting a Drum Voice is different to that for selecting a Normal Voice.

Selecting Preset Drums (PRE:DR1~DR8)

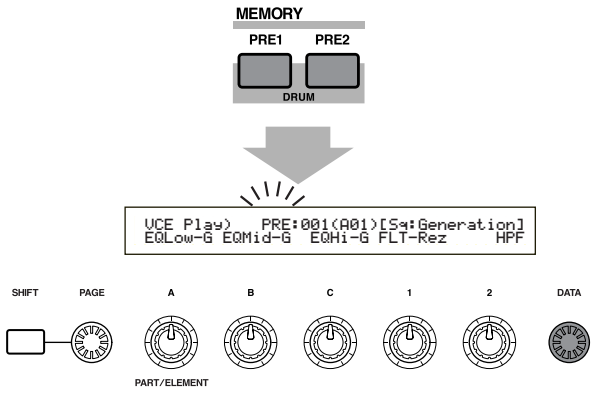
- Press the MEMORY [PRE2] key while holding down the MEMORY [PRE1] key (or vice versa) to select the Preset (PRE) Memory of the Drum Voice. Then press PROGRAM key [1] to [8] (CS6x only) to select Drum Voice PRE:DR1 (Preset Drum 1) to DR8 (Preset Drum 8).


MEMORY
PRE1 PRE2
DRUM
1 2 3 4 5 6 7 8
GENERAL QED ARPEGGIO CONTROL COM LFO EFFECT
9 10 11 12 13 14 15 16
OSC PITCH FILTER AMPLITUDE LFO EQ PLG
PROGRAM PART

- Press the MEMORY [PRE2] key while holding down the MEMORY [PRE1] key (or vice versa) to select the Preset (PRE) Memory of the Drum Voice. Then use the [INC/YES] or [DEC/NO] keys to select the Drum Voice.



- Press the MEMORY [PRE2] key while holding down the MEMORY [PRE1] key (or vice versa) to select the Preset (PRE) Memory of the Drum Voice. Then use the [DATA] knob to select the Drum Voice.

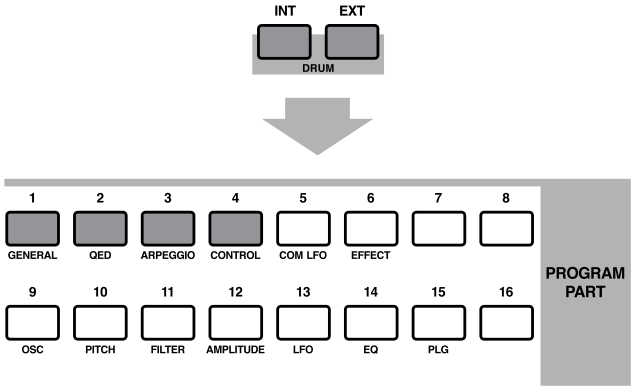


NOTE Once you have selected one Drum Voice, you can easily switch to another by simply using PROGRAM keys [1] to [8], the [INC/YES] and [DEC/NO] keys or the [DATA] knob.

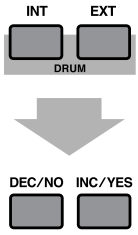
Selecting User Drums (INT:DR1/2 and EXT:DR1/2)

- Press the MEMORY [EXT] key while holding down the MEMORY [INT] key (or vice versa) to select the Internal/External (INT/EXT) Memory of the User Drum Voice. Then press PROGRAM keys [1] to [4] (CS6x only) to select, respectively, User Drum Voice INT:DR1 (Internal Drum 1), INT:DR2 (Internal Drum 2), EXT:DR1 (External Drum 1) and EXT:DR2 (External Drum 2).

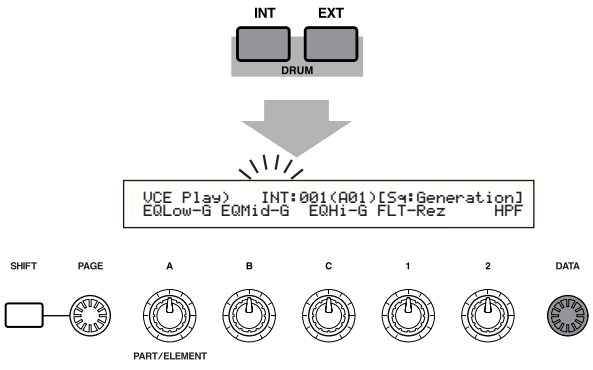
NOTE User Drum Voices on external memory must be loaded from Memory Card.



- Press the MEMORY [EXT] key while holding down the MEMORY [INT] key (or vice versa) to select the Internal/External (INT/EXT) Memory of the User Drum Voice. Then use the [INC/YES] or [DEC/NO] keys to select the Drum Voice.



- Press the MEMORY [EXT] key while holding down the MEMORY [INT] key (or vice versa) to select the Internal/External (INT/EXT) Memory of the User Drum Voice. Then use the [DATA] knob to select the User Drum Voice.



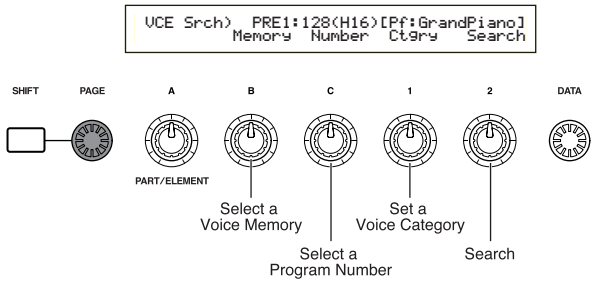
NOTE Once you have one User Drum Voice, you can easily switch to another by simply using PROGRAM keys [1] to [4], the [INC/YES] and [DEC/NO] keys or the [DATA] knob.

Using the Voice Category Search

With the Voice Category Search, you can quickly find Voices within a specified Voice Category. For example, if you specify the "Pf" (piano) Voice Category and use the Voice Category Search, you can select from all the voices which fall into the "Pf" Voice Category.

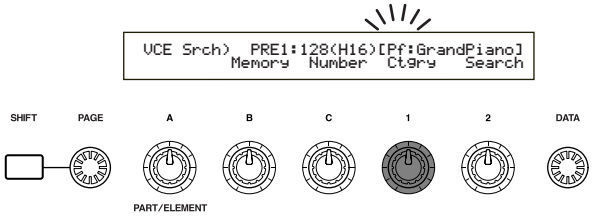
To start the Voice Category Search, first turn the [PAGE] knob to switch to the Voice Search screen.

NOTE If the Plug-in Voice is selected from a Custom Bank (Page 114) of a Plug-in Board, the Category Search feature will not be available.



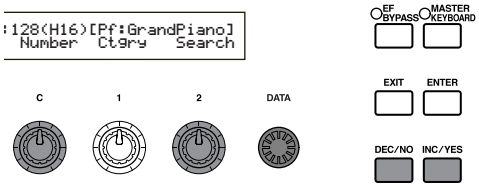
❶Turn Knob [B] to select a Voice Memory.

❷Turn Knob [1] to select a Voice Category. The Voice Category in the LCD will blink.



NOTE The different Voice Categories are listed on Page 80.

❸Use Knob [2], the [INC/YES] and [DEC/NO] keys, the [DATA] knob and Knob [C] to search for a Voice. The selected voices are called up using each knob and key. The functions of knobs and keys are given below.



Knob [2]:
Use this to switch between Voices in the selected Category. Turn the knob clockwise to increment the voice number and anti-clockwise to decrement it.

[DATA] knob (or [INC/YES] or [DEC/NO] key)
You can scroll through Voices in the specified Category across the Memories. Turning the [DATA] knob clockwise (or press the [INC/YES] key) jumps to the next Voice number in the same Category, in ascending order. Similarly, turning the [DATA] knob anti-clockwise (or press the [DEC/NO] key) jumps to the next Voice number in the same Category, in descending order. When you reach to the last (first) Voice in a Memory, you can select the first (last) Voice in that Category in the next (previous) Memory by continuously turning the knob clockwise (anti-clockwise) or pressing the [INC/YES] ([DEC/NO]) key.

Knob [C]:
Using the Knob [C], you can select a Voice one by one in the current Memory, likewise for normal Voice selection. Turning the knob clockwise jumps to the next Voice number. Turning the knob anti-clockwise jumps to the previous Voice number.

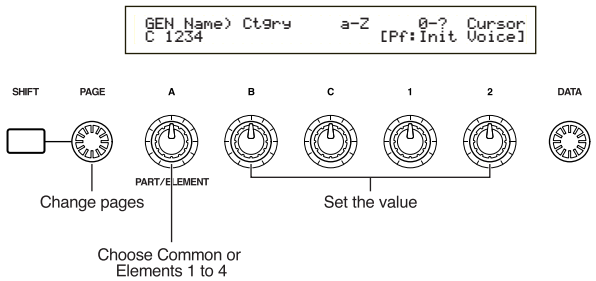
NOTE If the Voice within the selected Category cannot be found within the current Voice Memory, [------] is displayed in the LCD and you will not be able to use Knob [2]. Press the [ENTER] key to start searching in the next Memory.

Voice Edit

There are three kinds of Voices: Normal Voices, Drum Voices and Plug-in Voices (if a Plug-in board has been installed). The following is an explanation of the parameters used to edit each kind of Voice.

NOTE Details about Voices are given on Page 36.

The following is displayed when you enter Voice Edit Mode. The displayed screens will vary according to the type of Voice being edited, but basically the [PAGE] knob is used to switch between screens and the parameters on each screen are altered using Knobs [A], [B], [C], [1] and [2]. The [DATA] knob and the [INC/YES] and [DEC/NO] keys can be used to alter parameters in small increments.



While holding down the [SHIFT] key, you can use Knobs [A], [B], [C], [1] or [2] to move the cursor to the respective parameter without changing it's value. You can also move the cursor using the [DATA] knob or the [INC/YES] and [DEC/NO] keys while holding down the [SHIFT] key.

NOTE You need to select the Voice before entering Voice Edit Mode (Page 75). All parameters can be set and stored per Voice.

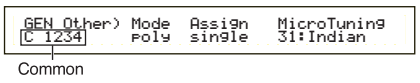
NOTE See page 21 on how to enter Voice Edit mode.

Common Edit and editing each Element

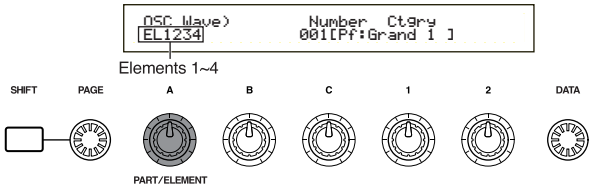
Voices can consist of up to four Elements (Page 37). Use Common Edit to edit the settings common to all four Elements. Voice Edit Mode can be divided into screens for Common Edit and those for editing each Element.

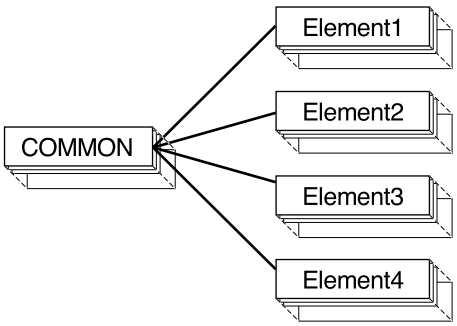
In Voice Edit Mode, Knob [A] is used to switch between the Common Edit screens and the screens for editing each Element.

Common Edit screens



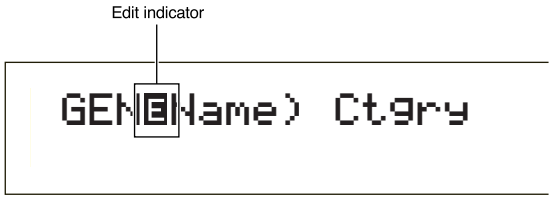
Element 1 ~ 4 Edit Screens





The E Indicator

If you alter any parameters in Voice Edit Mode, the E indicator will be displayed in the top left of the screen. This gives a quick indication that the current voice has been modified but not yet stored.



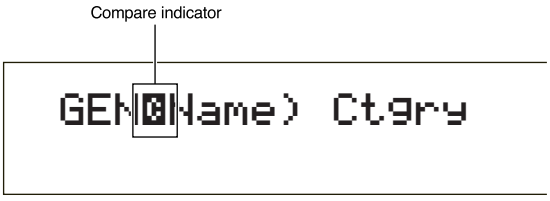
NOTE Even if you exit to Voice Play Mode, the edited settings for the current Voice will not be lost so long as you do not select another Voice.

NOTE The E indicator will also be displayed in Voice Play Mode, and if any Sound Control knobs or Assignable knobs are used.

The "Compare" Function

Use this to listen to the difference between the Voice with your edited settings and the same Voice prior to editing.

1. Press the [COMPARE (EDIT)] key while in Voice Edit Mode. The E indicator at the top left of the screen will change to the C indicator and the Voice settings prior to editing will temporarily be reinstated for comparison purposes.



NOTE While the "Compare" function is enabled, editing will not be possible using knobs [A] to [C] or knob [1]/[2].

2. Press the [EDIT] key again to disable the "Compare" function and restore the settings for your edited Voice.

The ELEMENT ON/OFF Function

Use this to mute individual Elements within a Voice. For example, you could mute all Elements other than that which you are editing. Thus, you can hear how the edited settings affect just that Element. Details are given on Page 61.

Voice Store

The edited settings for the current Voice will be lost if you select another Voice or Mode. To avoid losing important data, you should always use Voice Store to store your edited Voice. Details about the Voice Store procedure are given earlier (Page 116).

NOTE When creating a new Voice from scratch, it can be useful, prior to editing, to clear the settings for the current Voice using the Initialize Voice function in Voice Job Mode (Page 115).

Normal Voice

When editing Normal Voices, there are 12 settings consisting of six Common Edit settings (common to all four Elements) and six Element-specific settings.

Voice Edit Mode
└Common
- Common General — 80
  - GEN Name (General Name) — 80
  - GEN Other (General Other) — 81
- Common Quick Edit — 81
  - QED Level (Quick Edit Level) — 81
  - QED EffectCtrl (Quick Edit Effect Control) — 81
  - QED Filter (Quick Edit Filter) — 82
  - QED EG (Quick Edit Envelope Generator) — 82
- Common Arpeggio — 82
  - ARP Type (Arpeggio Type) — 82
  - ARP Limit (Arpeggio Note Limit) — 83
  - ARP Mode (Arpeggio Mode) — 83
  - ARP PlayEF (Arpeggio Play Effect) — 83
- Common Controller — 84
  - CTL Portamento — 84
  - CTL Bend (Pitch Bend) — 84
  - CTL Set1 (Control Set 1) — 84
  - CTL Set2 (Control Set 2) — 84
  - CTL Set3 (Control Set 3) — 84
  - CTL Set4 (Control Set 4) — 84
  - CTL Set5 (Control Set 5) — 84
  - CTL Set6 (Control Set 6) — 84
- Common LFO (Low Frequency Oscillator) — 85
  - LFO Wave — 85
  - LFO Fade — 87
  - LFO Dest1 (LFO Destination 1) — 87
  - LFO Dest2 (LFO Destination 2) — 87
- Common Effect — 88
  - EFF InsEF (Insertion Effect) — 88
  - EFF EF1 (Insertion Effect 1) — 88
  - EFF EF1 (Insertion Effect 2) — 88
  - EFF Rev (Reverb) — 89
  - EFF Cho (Chorus) — 89
- Element OSC (Oscillator) — 89
  - OSC Wave (Oscillator Wave) — 89
  - OSC Out (Oscillator Out) — 89
  - OSC Pan (Oscillator Pan) — 90
  - OSC Limit (Oscillator Limit) — 90
- Element Pitch — 90
  - PCH Tune (Pitch Tune) — 90
  - PEG VelSens (PEG Velocity Sensitivity) — 91
  - PEG Time — 91
  - PEG Level — 91
  - PEG Release — 91
  - PCH Scale (Pitch Scale) — 92
- Element Filter — 93
  - FLT Type (Filter Type) — 93
  - FLT HPF (High Pass Filter) — 95

- FLT Sens (Filter Sensitivity) — 95
- FEG VelSens (FEG Velocity Sensitivity) — 95
- FEG Time — 96
- FEG Level — 96
- FEG Release — 96
- FLT KeyFlw (Filter Key Follow) — 96
- FLT Scale (Filter Scale Break Point) — 97
- FLT Scale (Filter Scale Offset) — 97

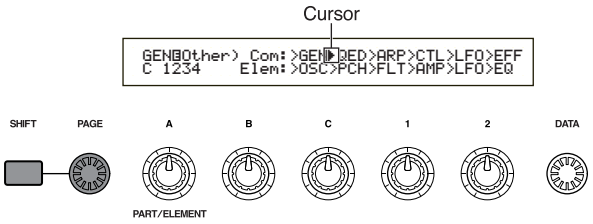
Element Amplitude — 98
- AEG VelSens (AEG Velocity Sensitivity) — 98
- AEG Time — 98
- AEG Level — 98
- AEG Release — 98
- AEG KeyFlw (AEG Key Follow) — 99
- AEG Scale (AEG Scale Break Point) — 100
- AEG Scale (AEG Scale Offset) — 100

Element LFO (Low Frequency Oscillator) — 100
- LFO Wave — 100
- LFO Depth — 101

Element EQ (Equalizer) — 101
- EQ Type — 101
- EQ Param (EQ Parameter) — 101

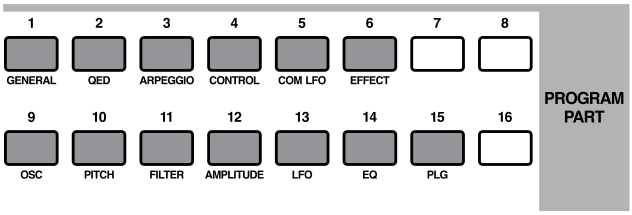
Menu Display

You will see the following if you use the [PAGE] knob while holding down the [SHIFT] key. Use the [PAGE] knob to move the cursor to the parameter you wish to edit, then release the [SHIFT] key to jump to the screen you were previously at.



Selecting a Menu

On the CS6x in Voice Edit Mode, you can directly select a Menu using the PROGRAM/PART keys, [1] to [6] and [9] to [15]. Each key has an associated Menu name shown below it.



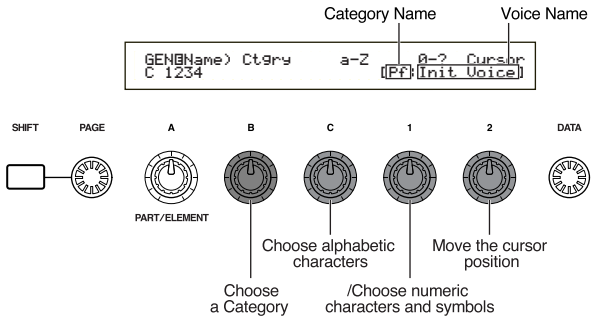
Common General

You can set the Voice Name, Voice output settings and other general parameters in the Common Edit screens. The following two screens are available for general settings.

GEN Name (General Name)
GEN Other (General Other)

GEN Name (General Name)

You can set a Voice Name consisting of up to 10 characters. You can also select the Category Name to the left of the Voice Name.



Setting the Voice Name

1. Use Knob [2] to move the cursor to the position of the first character. The selected character will blink.
2. Use Knob [C] to enter an alphabetic character or Knob [1] to enter a numeric character/symbol.
3. Use Knob [2] to move the cursor to the position of the next character.
4. Repeat Steps 2 and 3 until all the characters have been set for your Voice Name.

   You can also use the [INC/YES] and [DEC/NO] keys or the [DATA] knob to enter alphabetic and numeric characters as well as symbols.
5. Use Knob [B] to set the Category Name if necessary.

   By setting the Category Name, it will be easier to identify the Voice later. The Category Search function (Page 77) can also be used to search for it. If you do not wish to set a Category Name, the Category will be shown as two hyphens.

Settings for alphabetic and numeric characters and Category Names :

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z	A	B	C	D	E	F	G	H	I	J	K	L
M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	0	1	2	3	4
5	6	7	8	9		!	"	#	$	%	&	'	(	)	*	+	,	-
.	/	:	;	<	=	>	?	@	[	¥	]	^	_	`	{	|	}	

LCD	Category	LCD	Category
--	Unassigned	Pd	Synth Pad
Pf	Piano	Fx	Synth Sound Effects
Cp	Chromatic Percussion	Et	Ethnic
Or	Organ	Pc	Percussive
Gt	Guitar	Se	Sound Effects
Ba	Bass	Dr	Drums
St	Strings/Orchestral	Sc	Synth Comping
En	Ensemble	Vo	Vocal
Br	Brass	Co	Combination
Rd	Reed	Wv	Material Wave
Pi	Pipe	Sq	Sequence
Ld	Synth Lead		

GEN Other (General Other)

There are various parameters for Micro Tuning and for controlling how the generated sound is output.

■ Mode

Select monophonic or polyphonic playback. Select whether the Voice is played back monophonically (single notes only) or polyphonically (multiple simultaneous notes).

❑ **Settings:** mono, poly

■ Assign

If you set Key Assign to "single," the doubled playback of the same note is prevented. The synthesizer will terminate a note when the same note is received again. If you select "multi," the synthesizer will consecutively assign each instance of the same received note to a separate channel, making multiple part tone generation possible.

❑ **Settings:** single, multi

■ MicroTuning

Set the Micro Tuning (tuning system, or temperament) used for the Voice. Normally you would use "Equal Temperament" but there are also 31 other tuning systems available.

❑ **Settings:** (see the following list)

No.	Type	Key	Comments
00	Equal temperament	—	The "compromise" tuning used for most of the last 200 years of Western music, and found on most electronic keyboards. Each half step is exactly 1/12 of an octave, and music can be played in any key with equal ease. However, none of the intervals are perfectly in tune.
01~12	Pure major	C~B	This tuning is designed so that most of the intervals (especially the major third and perfect fifth) in the major scale are pure. This means that other intervals will be correspondingly out of tune. You need to specify the key (C~B) you will be playing in.
13~24	Pure minor	A~G#	The same as Pure Major, but designed for the minor scale.
25	Werckmeister	—	Andreas Werckmeister, a contemporary of Bach, designed this tuning so that keyboard instruments could be played in any key. Each key has a unique character.
26	Kirnberger	—	Johan Philipp Kirnberber was also concerned with tempering the scale to allow performances in any key.
27	Vallotti & Young	—	Francescantonio Vallotti and Thomas Young (both mid–1700s) divised this adjustment to the Pythagorean tuning in which the first six fifths are lower by the same amount.
28	1/4 shifted	—	This is the normal equal tempered scale shifted up 50 cents.
29	1/4 tone	—	Twenty–four equally spaced notes per octave. (Play twenty–four notes to move one octave.)
30	1/8 tone	—	Forty–eight equally spaced notes per octave. (Play forty–eight notes to move one octave.)
31	Indian	C~B	Usually observed in the Indian music (white keys [C~B] only).

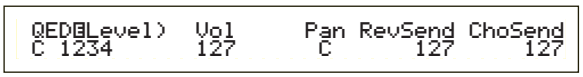
Common Quick Edit

Various parameters control the sonic properties of the Voice, and many can also be edited using the Sound Control knobs on the front panel of the CS6x. There are four screens.

QED Level (Quick Edit Level)
QED EffectCtrl (Quick Edit Effect)
QED Filter (Quick Edit Filter)
QED EG (Quick Edit Envelope Generator)

QED Level (Quick Edit Level)

These parameters control the output level (volume) and pan position of the Voice.



■ Vol (Volume)

Set the output level of the Voice.

❑ **Settings:** 0 ~ 127

■ Pan

Set the stereo pan position of the Voice. You can also adjust this parameter using the [PAN] knob on the front panel of the CS6x.

❑ **Settings:** L63 (Left) ~ C (Center) ~ R63 (Right)

■ RevSend (Reverb Send)

Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect. You can also adjust this parameter using the [REVERB] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

■ ChoSend (Chorus Send)

Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect. You can also adjust this parameter using the [CHORUS] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

QED EffectCtrl (Quick Edit Effect)

Set the amount of Chorus applied to the entire Voice.

■ Chorus

Set an offset value for the parameters used by each type of Chorus.

❑ **Settings:** -64 ~ 0 ~ +63

QED Filter (Quick Edit Filter)

These parameters control filters which affect the tonal quality of the Voice. If you are using LPF (Low Pass Filter) and HPF (High Pass Filter) combined together, the parameters in the QED Filter page only affects LPF.

■ Cutoff

Set the cutoff frequency. The frequency set here will be a center frequency for signals to be filtered when they pass through each filter. On the CS6x, the frequency can be set by the [CUTOFF] knob on the front panel.

❑ **Settings:** -64 ~ 0 ~ +63

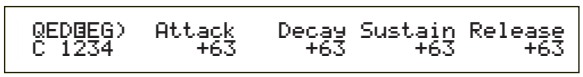
■ Reso (Resonance)

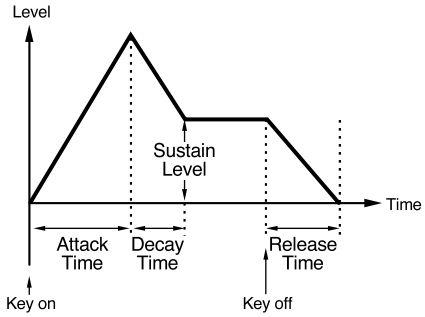
Set the amount of Resonance (harmonic boost) applied to the signal around the Cutoff frequency. This is a useful way of adding further character to the sound. You can also adjust this parameter using the [RESONANCE] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

QED EG (Quick Edit Envelope Generator)

These four parameters control the change in the output level of a Voice over the time that a note is played.





■ Attack

Set the transition time from the moment a key on the keyboard is pressed to the point at which the level of the Voice reaches its peak. You can also adjust this parameter using the [ATTACK] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ Decay

Set the transition time from the point at which the level of the Voice reaches its peak to the point at which it levels off. You can also adjust this parameter using the [DECAY] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ Sustain

Set the level of the Voice maintained while the note on the keyboard is being held down. You can also adjust this parameter using the [SUSTAIN] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ Release

Set the transition time from the point at which the note on the keyboard is released to the point at which the level of the Voice reaches zero. You can also adjust this parameter using the [RELEASE] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

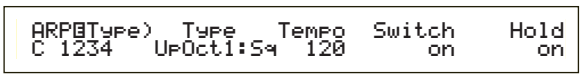
Common Arpeggio

The following four parameters control the behavior of the Arpeggiator.

ARP Type (Arpeggio Type)
ARP Limit (Arpeggio Note Limit)
ARP Mode (Arpeggio Mode)
ARP PlayEF (Arpeggio Play Effect)

ARP Type (Arpeggio Type)

These are the basic parameters of the Arpeggiator.



■ Type

Set the Arpeggio Type.

❑ **Settings:** (see the separate Data List)

Sq (Sequence):
Creates a general arpeggio phrase. Mainly octave up/down phrases.

Ph (Phrase):
Creates more musical phrases than Sq. Starting with "Techno," there are phrases for a wide variety of musical genres, and for creating backing tracks for guitar, piano and other instruments.

Dr (Drum Pattern):
Creates drum pattern-type phrases. Phrase genres covered include rock and dance. This Type is ideal for use with drum and percussion sounds.

Cl (Phrase Clip):
Select this type to a Clip Kit that is assigned with loop-mixed or loop-divided Phrase Clips, to create a new arpeggio pattern.

Ct (Control):
Creates tonal changes. No note information is created. The Key Mode parameter in Arpeggio Mode must be set to "direct."

■ Tempo

Set the Arpeggio Tempo.

❑ **Settings:** 25 ~ 300

NOTE [MIDI] is displayed here and the parameter cannot be altered if MIDI sync is enabled (Page 167).

■ Switch

Switch the Arpeggiator on or off. You can also set this using the [ARPEGGIO ON/OFF] key on the front panel of the CS6x.

❑ **Settings:** off, on

■ Hold

Switch the Arpeggiator Hold on or off. You can also set this using the [ARPEGGIO HOLD] key on the front panel of the CS6x.

❑ **Settings:** syncoff, off, on

NOTE Details about this are given on Page 44.

ARP Limit (Arpeggio Note Limit)

■ Note Limit

Set the lowest and highest notes in the Arpeggiator's note range.

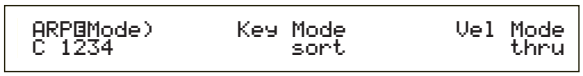
❑ **Settings:** C-2 ~ G8 (lowest and highest set separately)

NOTE If you specify the highest note first and the lowest note second, for example "C5 to C4," then the note range covered will be "C-2 to C4" and "C5 to G8."

NOTE You can set the lowest and highest notes in the range by pressing notes on the keyboard while holding down the [SHIFT] key.

ARP Mode (Arpeggio Mode)

These parameters control the way in which notes are played back by the Arpeggiator.



■ Key Mode

Set how the Arpeggio is played back when keys on the keyboard are pressed. There are 3 modes.

❑ **Settings:**

sort:
Plays back notes in ascending order from the lowest key pressed to the highest.

thru:
Plays back notes in the order in which the keys are pressed.

direct:
Plays back the notes exactly as you play them. If changes to Voice parameters (such as Pan or Cutoff frequency) are included in the Arpeggio sequence data, they will be applied and reproduced whenever the Arpeggio plays back.

NOTE If the Arpeggio Category is set to Ct, you will not hear any sounds unless you select "direct" here.

NOTE With the "sort" and "thru" settings, the order in which notes are played back will depend on the Arpeggio sequence data.

■ Vel Mode (Velocity Mode)

Set the playback velocity of the Arpeggio. There are 2 modes.

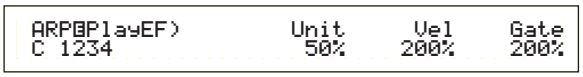
❑ **Settings:**

original:
Preset velocities are used in the Arpeggio sequence.

thru:
Velocities of the notes you play are used in the Arpeggio sequence.

ARP PlayEF (Arpeggio Play Effects)

You can set Play Effects for the Arpeggio. Play Effects can be used to temporarily adjust the timing and velocity of MIDI notes, thus affecting the groove of the Arpeggio pattern.



■ Unit

Adjust the Arpeggio playback time. For example, if you set a value of 200%, the playback time will be doubled and the tempo halved. Alternatively, if you set a value of 50%, the playback time will be halved and the tempo doubled. Normal playback time is 100%.

❑ **Settings:** 50%, 66%, 75%, 100%, 133%, 150%, 200%

■ Vel (Velocity)

Set the Velocity offset value (the strength at which the keyboard is played). This determines how the original Velocities are increased or decreased during Arpeggio playback. A setting of 100% means the original values are used. Settings below 100% will reduce the velocity of the Arpeggio notes, whereas settings above 100% will increase the velocities.

❑ **Settings:** 0% ~ 200%

NOTE If the Velocity value falls below 1, it will be limited to 1. If it exceeds 127, it will be limited to 127.

■ Gate (Gate Time)

Set the Gate Time Rate value (the length of a note). This determines how the original Gate Times are increased or decreased during Arpeggio playback. A setting of 100% means the original values are used. Settings below 100% will shorten the gate times of the Arpeggio notes, whereas settings above 100% will lengthen them. You can also set this using the [GATE TIME] knob on the front panel of the CS6x.

❑ **Settings:** 0% ~ 200%

NOTE If the Gate Time value falls below 1, it will be limited to 1.

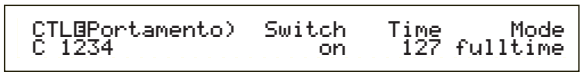
Common Controller

There are eight Control Settings. You can set the Controller parameters for Portamento, the Pitch Bend Wheel, and for each Element in a Voice.

CTL Portamento
CTL Bend (Pitch Bend)
CTL Set1 (Control Set 1)
CTL Set2 (Control Set 2)
CTL Set3 (Control Set 3)
CTL Set4 (Control Set 4)
CTL Set5 (Control Set 5)
CTL Set6 (Control Set 6)

CTL Portamento

Set the Portamento parameters. Portamento will create a smooth transition in pitch from the first note played to the next.



■ Switch

Switch Portamento on or off. You can also set this using the PORTAMENTO [ON/OFF] key on the front panel of the CS6x.

❑ **Settings:** off, on

■ Time

Set the pitch transition time. Higher values mean longer transition times. You can also set this using the [PORTAMENTO] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

■ Mode

Set the Portamento mode. The behavior of the Portamento varies depending on whether Mode in GEN Other is set to "mono" or "poly."

❑ **Settings:** fingered, fulltime

If the Mode in GEN Other is set to "mono":
fingered:
Portamento is only applied when you play legato (playing the next note before releasing the previous one).

fulltime:
Portamento is always applied.

If the Mode in GEN Other is set to "poly":
This is the same as for "mono," except that Portamento is applied to multiple notes.

CTL Bend (Pitch Bend)

You can set the amount by which the Pitch Bend Wheel changes the pitch of the Voice.

■ Lower

Set the amount (in semitones) by which the Voice pitch changes when the Pitch Bend Wheel is moved downwards. For example, a value of -12 means that the pitch of the Voice drops by up to an octave when the Pitch Bend Wheel is moved downwards.

❑ **Settings:** -48 ~ 0 ~ +24

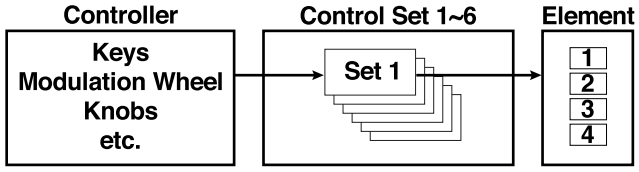
■ Upper

Set the amount (in semitones) by which the Voice pitch changes when the Pitch Bend Wheel is moved upwards. For example, a value of +12 means that the pitch of the Voice rises by up to an octave when the Pitch Bend Wheel is moved upwards.

❑ **Settings:** -48 ~ 0 ~ +24

CTL Set1 (Control Set 1) to CTL Set6 (Control Set 6)

The controllers and knobs on the front panel, the keyboard, and so on can be assigned a variety of uses. For example, keyboard aftertouch can be used to control vibrato and the Modulation Wheel could be used to control Resonance. They can even be used to control parameters within individual Elements. These control assignments are called "Control Sets." You can assign up to six different Control Sets per Voice. Thus there are six screens, each for a separate controller: CTL Set1 to CTL Set6.



■ Src (Source)

Set the Controller used to control the function chosen in Dest. The following nine controllers are available.

❑ **Settings:** PB (Pitch Bend Wheel), MW (Modulation Wheel), AT (Aftertouch), FC (Foot Controller), FS (Foot Switch), RB (Ribbon Controller), BC (Breath Controller), KN1/2 (Knobs 1/2)

■ Dest (Destination)

Set the parameter to be controlled by the Control Set in Src.

❑ **Settings:** (see the Controls List of the separate Data List)

■ ElemSw (Element Switch)

Select whether the Controller will affect each individual Element. Move the cursor (blinking) using Knob [1] and use the [DATA] knob or the [INC/YES] and [DEC/NO] keys to enable/disable the Elements which the Controller will affect. Affected Elements are shown by number.

❑ **Settings:** Elements 1 to 4 enabled ("1" to "4" displayed) or disabled ("-" displayed)

NOTE This is disabled if the Dest parameter is set to 00 to 33.

■ Depth

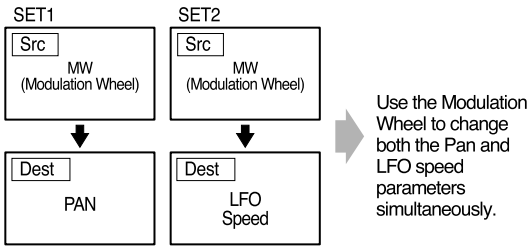
Set the amount by which the parameter selected in Dest can be controlled.

❑ **Settings:** -64 ~ 0 ~ +63

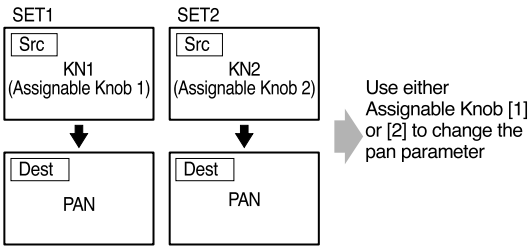
Example of Control Set Assignment

Using Control Sets 1 to 6, you can assign individual Src (Source) controllers to multiple Dest (Destination) parameters, or multiple Src controllers to individual Dest parameters.

Ex.1:Use a single Src controller to control multiple Dest parameters.



Ex.2:Use multiple Src controllers to control a single Dest parameter.



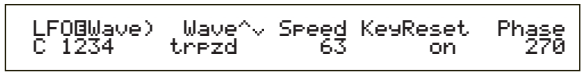
NOTE Details about Control Set Assignments are given in the Basics Section of this manual (Page 49).

Common LFO (Low Frequency Oscillator)

There are various settings for the LFO. The LFO is used to generate low frequency signals and can be used to create vibrato, wah, tremolo and other effects when applied to pitch/filter/amplitude/etc. parameters. For example, variations can be simultaneously applied to both pitch and filter parameters, and to parameters specific to individual Elements. The following four settings are available.

LFO Wave
LFO Fade
LFO Dest1 (LFO Destination 1)
LFO Dest2 (LFO Destination 2)

LFO Wave

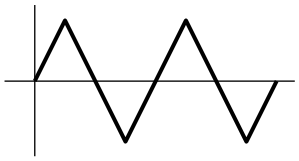


■ Wave

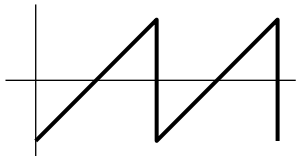
Select the LFO Wave. Depending on the Wave selected, you can create different kinds of modulated sounds. The following 12 LFO waveforms are available.

❑ **Settings:** tri, tri+, saw up, saw dw, squ1/4, squ1/3, squ, squ2/3, squ3/4, trpzd, S/H 1, S/H 2

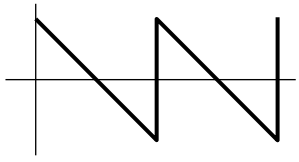
tri



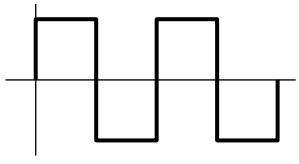
saw up



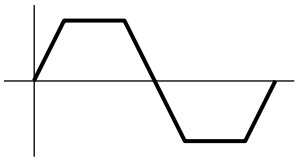
saw dw



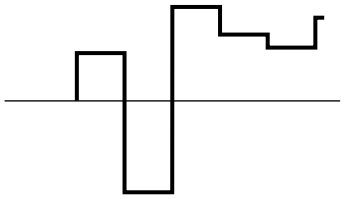
squ



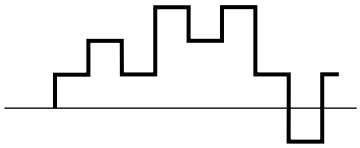
trpzd



S/H 1



S/H 2

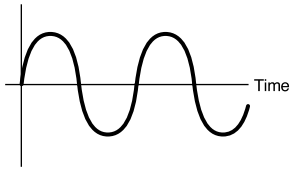


■ Speed

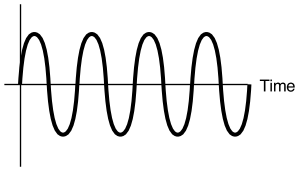
Set the speed of the LFO Wave modulation. Higher values mean faster modulation speeds.

❑ **Settings:** 0 ~ 63, 16th (16th note), 16th/3 (16th note-triplet), 16th. (16th dot-note), 8th (8th note), 8th/3 (8th note-triplet), 8th. (8th dot-note), 4th (4th note), 4th/3 (4th note-triplet), 4th. (4th dot-note), 2nd (half note), 2nd/3 (half note-triplet), 2nd. (half dot-note), 4thx4 (whole note), 4thx5 (5x4th notes), 4thx6 (6x4th notes), 4thx7 (7x4th notes), 4thx8 (8x4th notes)

Speed = Slow



Speed = Fast



NOTE The length of the note depends on the internal or external MIDI tempo setting.

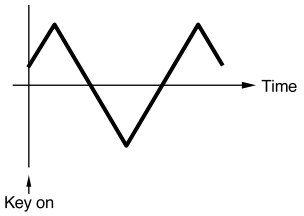
■ KeyReset (Key on Reset)

Set whether the LFO is reset each time a note is pressed. The following three settings are available.

❑ **Settings:** off, each-on, 1st-on

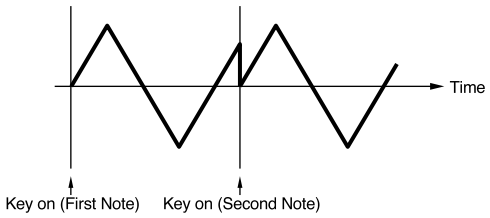
off

The LFO is self-running (no synchronization) and starts a waveform at any phase when you play on the keyboard.



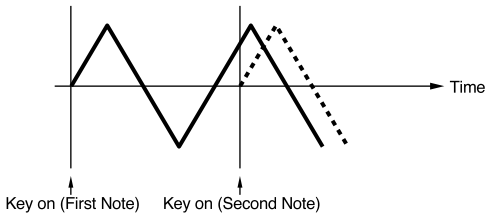
each-on

The LFO resets with each note you play and starts a waveform at the phase specified by the Phase parameter (see below).



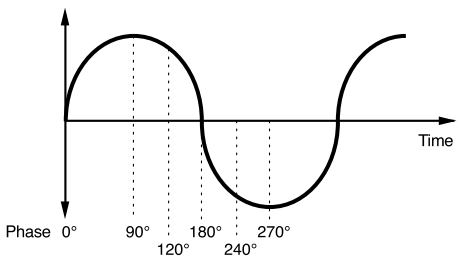
1st-on

The LFO resets with every note you play and starts the waveform at the phase specified by the Phase parameter (Show below). If you play a second note while the first note is being played (Note Off has not been received), the LFO does not reset to the specified phase (no synchronization) with the second note and after.



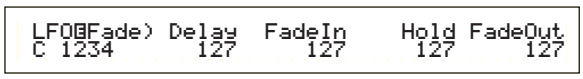
■ Phase

Set the phase at which the LFO Wave starts whenever a note is played. Phases of 0/90/120/180/240/270 degrees are available.



❑ **Settings:** 0, 90, 120, 180, 240, 270

LFO Fade

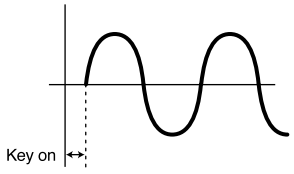


■ Delay

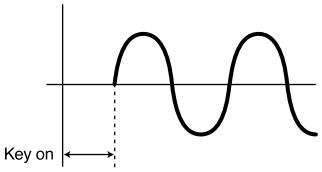
Set the delay time before the LFO comes into effect. A higher value means a longer delay time.

❑ **Settings:** 0 ~ 127

Short delay



Long delay

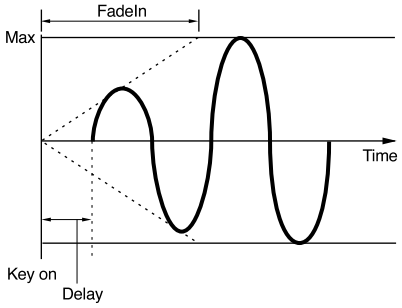


■ FadeIn (Fade-In)

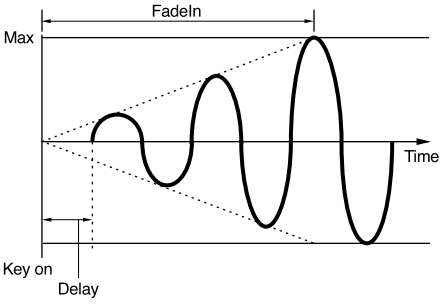
Set the time taken for the LFO effect to be faded in (after the Delay time has elapsed). A higher value means a slower fade-in.

❑ **Settings:** 0 ~ 127

Low FadeIn value
Faster fade-in



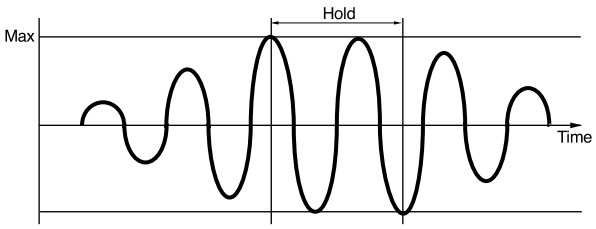
High FadeIn value
Slower fade-in



■ Hold

Set the length of time during which the LFO is held at its maximum level. A higher value means a longer Hold time.

❑ **Settings:** 0 ~ 127

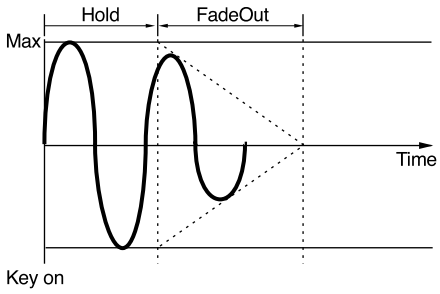


■ FadeOut (Fade-Out)

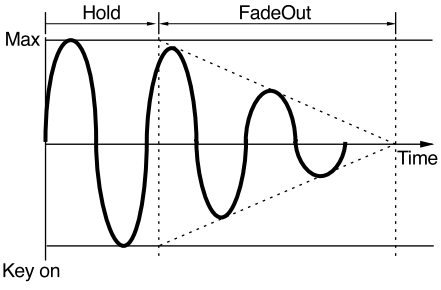
Set the time taken for the LFO effect to be faded out (after the Hold time has elapsed). A higher value means a slower fade-out.

❑ **Settings:** 0 ~ 127

Low FadeOut value
Faster fade-out



High FadeOut value
Slower fade-out



LFO Dest1 (LFO Destination 1)

LFO Dest2 (LFO Destination 2)

You can assign parameters to be controlled by the LFO Wave and set the LFO Wave Depth (amplitude). Two Destinations can be assigned, and you can choose from several parameters per Destination.

■ Dest (Destination)
Set the parameters which will be controlled (modulated) by the LFO Wave.

❑ **Settings:** AMD, PMD, FMD, RESO (Resonance), PAN, ELFOSpd (Element LFO Speed)

■ ElemSw (Element Switch)
Select whether to allow variations in the LFO Wave for each Element. Move the cursor (blinking) using Knob [1] and use the [DATA] knob or the [INC/YES] and [DEC/NO] keys to enable/disable LFO Wave variations for Elements 1 to 4. Enabled Elements are shown by number.

❑ **Settings:** Elements 1 to 4 enabled ("1" to "4" displayed) or disabled ("-" displayed)

■ Depth
Set the LFO Wave Depth (amplitude).

❑ **Settings:** 0 ~ 127

Common Effect

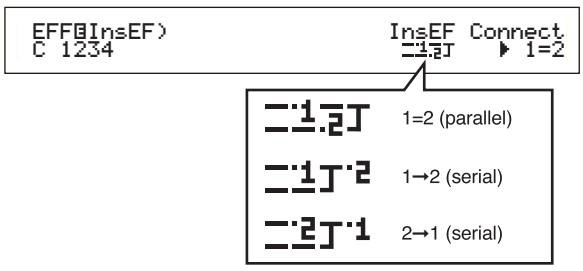
You can set two types of Insertion Effects, plus two System Effects (Reverb and Chorus). The following five screens are available.

EFF InsEF (Insertion Effect)
EFF EF1 (Insertion Effect 1)
EFF EF2 (Insertion Effect 2)
EFF Rev (Reverb)
EFF Cho (Chorus)

EFF InsEF (Insertion Effect)

■ InsEF Connect (Insertion Effect Connect)
Set up the connection between Insertion Effects 1 and 2. If you change this setting, the symbol denoting the signal routing (to the left of the setting) also changes to reflect the new signal flow.

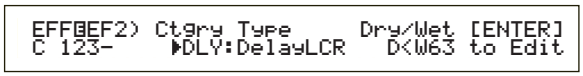
Signal routing symbols



❑ **Settings:** 1 = 2 (parallel), 1→2 (Insertion Effect 1 to 2), 2→1 (Insertion Effect 2 to 1)

EFF EF1/2 (Insertion Effect 1/2)

You can select the Effect Category for Insertion Effect 1/2 with the Ctgry parameter and the Effect Type with the Type parameter. After selecting the Effect Type, you can set its parameters by pressing the [ENTER] key.



■ Ctgry (Effect Category)
Set the Category of the Effect. Select a desired Category and press the [ENTER] key. The first Effect Type in that Category will automatically be recalled.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

■ Type (Effect Type)
Set the type of Effect. While the Category indicator is blinking in the display, you can press the [ENTER] key to recall the first Effect Type in that Category.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

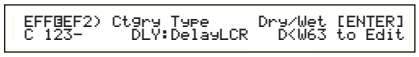
■ Dry/Wet
Set the mix level of the wet signal (which has been passed through the Effects Unit) and the dry signal (which has not been passed through the Effects Unit). This may be unavailable, depending on the selected Effect Type.

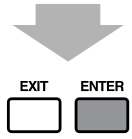
❑ **Settings:** D63 > W ~ D = W ~ D < W63

Effect Parameter Settings

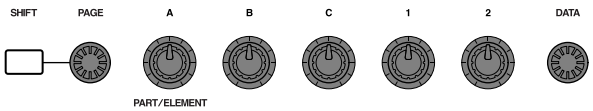
These parameters are available when you press the [ENTER] key for certain Effect Types.
Use the [PAGE] knob to switch between screens, and use the other knobs and the [INC/YES] and [DEC/NO] keys to set each parameter.
When you press the [EXIT] key, you will be returned to the Effect Type selection screen.

Effect Type selection screen





Parameter settings screen



NOTE The number of Parameters and the contents of each screen will vary depending on the selected Effect Type. Details are given in the Effect Type list of the separate Data List.

EFF Rev (Reverb)

You can select the Reverb Effect Type, then press the [ENTER] key to set its parameters.

```
EFF@Rev) Type              Return [ENTER]
C 1234   Basement             127 to Edit
```

■ **Type (Reverb Effect Type)**
Set the Reverb Effect Type.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

■ **Return**
Set the Return level of the Reverb Effect.

❑ **Settings:** 0 ~ 127

EFF Cho (Chorus)

You can select the Chorus Effect Type, then press the [ENTER] key to set its parameters.

```
EFF@Cho) Type      toRev  Return [ENTER]
C 1234   Chorus1     127     127 to Edit
```

■ **Type (Chorus Effect Type)**
Set the Chorus Effect Type.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

■ **toRev (To Reverb)**
Set the Send level of the signal sent from the Chorus Effect to the Reverb Effect.

❑ **Settings:** 0 ~ 127

■ **Return**
Set the Return level of the Chorus Effect.

❑ **Settings:** 0 ~ 127

Element OSC (Oscillator)

You can set the parameters for the Elements (Waves) which make up the Voice. Each Voice can consist of up to four Elements, and the following four screens are available for each.

OSC Wave (Oscillator Wave)
OSC Out (Oscillator Out)
OSC Pan (Oscillator Pan)
OSC Limit (Oscillator Limit)

OSC Wave (Oscillator Wave)

You can use Knob [A] to select each Element and Knob [C] to assign a Wave to it.

```
OSC@Wave)          Number  Ctgry
EL1234          001[Pf:Grand 1 ]
```

■ **Number (Wave Number)**
Select the Wave Number. The Category and Wave Name are displayed to the right of the selected Wave Number. You can assign a different Wave Number to each of the Elements.

❑ **Settings:** 000 (off) ~ 479 (Details about each Wave are given in the separate Data List.)

■ **Ctgry (Category)**
Select the Category containing the Wave you wish to use. Specify a desired Category and press the [ENTER] key. The first Wave in that Category will automatically be selected.

❑ **Settings:** Details about Wave Categories are given on Page 80.

OSC Out (Oscillator Out)

You can set the following output parameters for each Element of a Voice.

```
OSC@Out)  Level          Delay   InsEF
EL1234       96              0    ins2
```

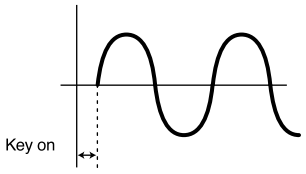
■ **Level**
Set the output level of each Element.

❑ **Settings:** 0 ~ 127

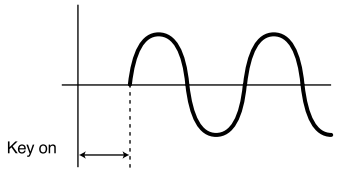
■ **Delay (Key On Delay)**
Set the time (delay) between the moment you press a note on the keyboard and the point at which the sound is played. You can set different delay times for each Element.

❑ **Settings:** 0 ~ 127

Short Delay



Long Delay



■ InsEF (Insertion Effect)

Set the Insertion Effect to which the output signal from each Element is sent. The Insertion Effect is bypassed if you select Thru.

❑ **Settings:** thru, ins1 (Insertion Effect 1), ins2 (Insertion Effect 2)

OSC Pan (Oscillator Pan)

You can set the following Pan parameters for each Element in the Voice.

```
OSC▣Pan)     Pan   Alter  Random   Scale
EL1234         C     L64      63     +63
```

■ Pan

Set the stereo Pan position for each Element (Wave). This will also be used as the basic Pan position for the Alternate, Random and Scale settings.

❑ **Settings:** L63 (Left) ~ C (Center) ~ R63 (Right)

■ Alter (Alternate)

Set the amount by which the sound is panned alternately left and right for each note you press. The Pan setting is used as the basic Pan position.

❑ **Settings:** L64 ~ 0 ~ R63

■ Random

Set the amount by which the sound is panned randomly left and right for each note you press. The Pan setting is used as the basic Pan position.

❑ **Settings:** 0 ~ 127

■ Scale

Set the amount by which the sound is panned left and right according to the position of the note on the keyboard. The Pan setting is used as the basic Pan position at note C3.

❑ **Settings:** -64 ~ 0 ~ +63

OSC Limit (Oscillator Limit)

You can set parameters controlling the note range of each Element and the velocity.

```
OSC▣Limit)   Note Limit       Vel Limit
EL1234       C-2  -  G 8      1   -  127
```

■ Note Limit

Set the lowest and highest notes of the keyboard range for each Element. Each Element will only sound for notes played within its specified range.

❑ **Settings:** C-2 ~ G8 (for the lowest and highest notes)

NOTE If you specify the highest note first and the lowest note second, for example "C5 to C4," then the note range covered will be "C-2 to C4" and "C5 to G8."

NOTE You can set the lowest and highest notes in the range by pressing notes on the keyboard while holding down the [SHIFT] key.

■ Vel Limit (Velocity Limit)

Set the minimum and maximum values of the velocity range within which each Element will respond. Each Element will only sound for notes played within its specified velocity range.

❑ **Settings:** 1 ~ 127 (for the minimum and maximum values)

NOTE If you specify the maximum value first and the minimum value second, for example "93 to 34," then the velocity range covered will be "1 to 34" and "93 to 127."

Element Pitch

You can set parameters governing the pitch of each Element. The Pitch Envelope Generator (PEG) controls the change in pitch from the moment a note is pressed on the keyboard to the point at which the sound has faded out completely. The following six screens are available.

PCH Tune (Pitch Tune)
PEG VelSens (PEG Velocity Sensitivity)
PEG Time (PEG Time)
PEG Level (PEG Level)
PEG Release (PEG Release)
PCH Scale (Pitch Scale)

PCH Tune (Pitch Tune)

You can set the tuning parameters and the effectiveness of the Envelope Generator (EG) for each Element.

```
PCH▣Tune)EGDepth Coarse    Fine  Random
EL1234       +63    + 0     + 0      +7
```

■ EGDepth

Set the amount of change applied by the PEG. A setting of zero means the original pitch is not changed.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Coarse**
Adjust the pitch of each Element in semitones.

❑ **Settings:** -48 ~ 0 ~ +48

■ **Fine**
Fine-tune the pitch of each Element.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Random**
Set the amount by which the pitch of each Element is varied at random for each note you press. A setting of zero means the original pitch is not changed.

❑ **Settings:** 0 ~ 127

PEG VelSens (PEG Velocity Sensitivity)

You can determine how the Pitch Envelope Generator (PEG) responds to note velocity.

■ **Level**
Set the velocity sensitivity of the PEG Level. Positive settings will cause the level to rise the harder you play the keyboard, and negative values will cause it to fall.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Time-Segment**
Set the velocity sensitivity of the PEG's Time parameters. Use Knob [2] to select the Segment, then use Knob [1] to set its Time parameter. Positive Time settings will play back the specified Segment faster and negative values will play it back slower.

❑ **Settings (Time):** -64 ~ 0 ~ +63

❑ **Settings (Segment):**
attack: Affects the Hold Time/Attack Time/Decay 1 Time
all: Affects all PEG Time parameters

PEG Time

You can set various Time parameters for the Pitch Envelope Generator (PEG). Combined with the PEG Level and PEG Release settings, these can be used control the change in sound from the moment a note is pressed on the keyboard to the moment it is released (Page 92). You can set different values for each Element.

■ **Hold (Hold Time)**
Set the Hold Time.

❑ **Settings:** 0 ~ 127

■ **Attack (Attack Time)**
Set the Attack Time.

❑ **Settings:** 0 ~ 127

■ **Decay1 (Decay 1 Time)**
Set the Decay 1 Time.

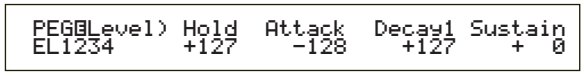
❑ **Settings:** 0 ~ 127

■ **Decay2 (Decay 2 Time)**
Set the Decay 2 Time.

❑ **Settings:** 0 ~ 127

PEG Level

You can set various Level parameters for the Pitch Envelope Generator (PEG). Combined with the PEG Time and PEG Release settings, these can be used control the change in sound from the moment a note is pressed on the keyboard to the moment it is released (Page 92). You can set different values for each Element.



■ **Hold (Hold Level)**
Set the Hold Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-4800 cents ~ 0 ~ +4800 cents)

■ **Attack (Attack Level)**
Set the Attack Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-4800 cents ~ 0 ~ +4800 cents)

■ **Decay1 (Decay 1 Level)**
Set the Decay 1 Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-4800 cents ~ 0 ~ +4800 cents)

■ **Sustain (Sustain Level)**
Set the Sustain Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-4800 cents ~ 0 ~ +4800 cents)

PEG Release

You can set Release Time and Release Level parameters for the Pitch Envelope Generator (PEG). Combined with the PEG Time and PEG Level settings, these can be used control the change in sound from the moment a note is released. You can set different values for each Element.

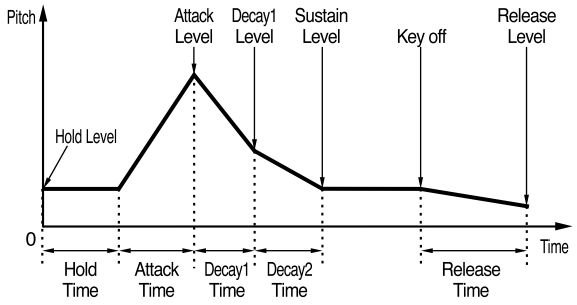
■ Time (Release Time)
Set the Release Time.

❑ **Settings:** 0 ~ 127

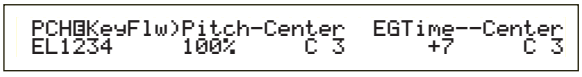
■ Level (Release Level)
Set the Release Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-4800 cents ~ 0 ~ +4800 cents)

Pitch Envelope Generator Settings
There are five Time settings (controlling the speed of changes to the sound) and five Level settings (controlling the pitch). The pitch of a note is held at the Hold Level for the length of time defined by the Hold Time. After the Hold Time has elapsed, the pitch changes in accordance with the Attack Time/Level, Decay 1/2 Time and the Decay 1 Level, then settles at the Sustain Level. When the note is released, the change in pitch is governed by the Release Time/Level settings.
Velocity Sensitivity and other parameters can also be set if required.



PCH Scale (Pitch Scale)
You can set the Pitch Scaling for each Element. Pitch Scaling is used to vary the Element pitch, PEG Levels and PEG Times according to the positions of the notes on the keyboard.



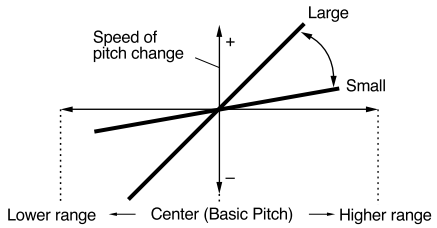
■ Pitch
Adjust the sensitivity of the Pitch Scaling for each Element according to the position of the note on the keyboard. The Center parameter is used as the basic pitch for this parameter.
A positive setting will cause the pitch of lower notes to change less and that of higher notes to change more. Negative values will have the opposite effect.

❑ **Settings:** -200% ~ 0 ~ +200% (At +100%, neighboring notes are pitched one semitone (100 cents) apart.)

■ Center (Center Key)
Set the basic pitch used by the Pitch parameter.

❑ **Settings:** C-2 ~ G8

NOTE You can also set this parameter by pressing the respective note on the keyboard while holding down the [SHIFT] key.



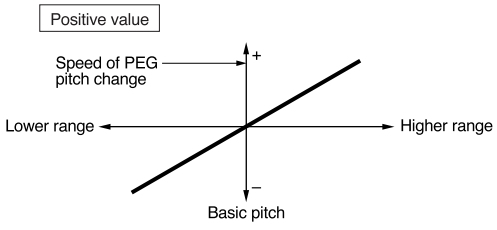
■ EGTime
The EGTime parameter controls the PEG Times for each Element according to the positions of the notes on the keyboard. The Center parameter is used as the basic pitch for this parameter.
A positive setting will cause the pitch of lower notes to change slower and that of higher notes to change faster. Negative values will have the opposite effect.

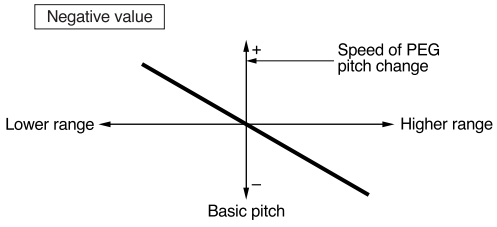
❑ **Settings:** -64 ~ 0 ~ +63

■ Center (Center Key)
Set the basic pitch used by the EGTime parameter. When the Center Key note is played, the PEG behaves according to its actual settings. The pitch change characteristics for other notes will vary in proportion to the EGTime settings.

❑ **Settings:** C-2 ~ G8

NOTE You can also set this parameter by pressing the respective note on the keyboard while holding down the [SHIFT] key.





Element Filter

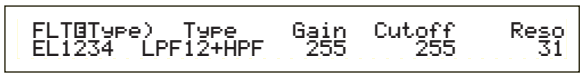
You can set Filter parameters to change the tonal characteristics of each Element. The following ten screens are available.

FLT Type (Filter Type)
FLT HPF (High Pass Filter)
FLT Sens (Filter Sensitivity)
FEG VelSens (FEG Velocity Sensitivity)
FEG Time
FEG Level
FEG Release
FLT KeyFlw (Filter Key Follow)
FLT Scale (Filter Scale Break Point)
FLT Scale (Filter Scale Offset)

FLT Type (Filter Type)

■ Type

Set the Filter Type. Parameters will vary according to the Type.



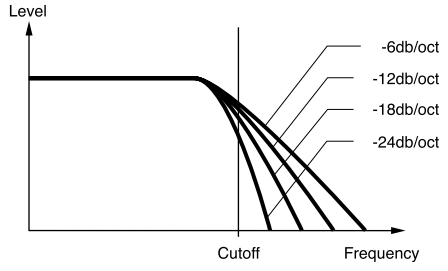
❑ **Settings:**
LPF12 + HPF (Low Pass Filter 12dB/oct + High Pass Filter),
LPF24D (Low Pass Filter 24dB/oct Digital),
LPF24A (Low Pass Filter 24dB/oct Analog),
LPF18 (Low Pass Filter 18dB/oct),
LPF18S (Low Pass Filter 18dB/oct Staggered),
LPF6 + HPF (Low Pass Filter 6dB/oct + High Pass Filter),
HPF24D (High Pass Filter 24dB/oct Digital),
HPF12 (High Pass Filter 12dB/oct),
BPF6 (Band Pass Filter 6dB/oct),
BPF12D (Band Pass Filter 12dB/oct Digital),
BPFW (Band Pass Filter Wide),
BEF6 (Band Elimination Filter 6dB/oct)
THRU (Bypass)

Filters

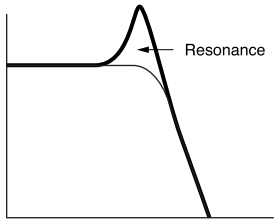
To generalize, there are basically four types of filter: an LPF (Low Pass Filter), an HPF (High Pass Filter), a BPF (Band Pass Filter) and a BEF (Band Elimination Filter). Each available filter has a different frequency response. There are also combinations of LPF and HPF.

- **LPF (Low Pass Filter):**

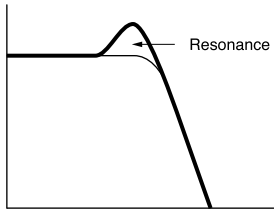
This only passes signals below the Cutoff frequency. You can then use the Reso (Resonance) parameter to add further character to the sound. Six types of LPF are available.



LPF24D (Low Pass Filter 24dB/oct Digital)
A 4-pole (-24db/oct) dynamic LPF with a strong Resonance.

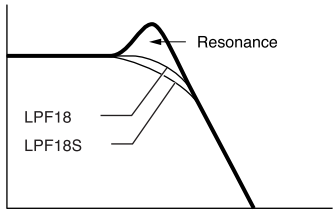


LPF24A (Low Pass Filter 24dB/oct Analog)
A 4-pole (-24db/oct) dynamic LPF with a character similar to those found on analog synthesizers.

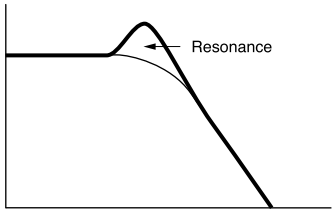


LPF18 (Low Pass Filter 18dB/oct)
A 3-pole (-18db/oct) dynamic LPF.

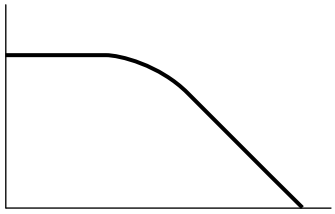
LPF18S (Low Pass Filter 18dB/oct Staggered)
Also a 3-pole (-18db/oct) dynamic LPF, but with a shallower frequency curve.



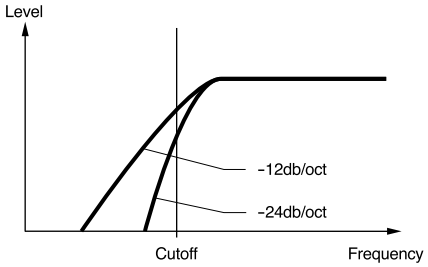
LPF12 (Low Pass Filter 12dB/oct)
A 2-pole (-12db/oct) dynamic LPF, designed to be used in combination with an HPF (High Pass Filter).



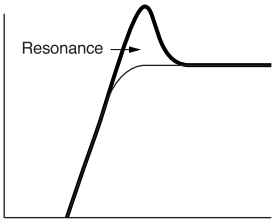
LPF6 (Low Pass Filter 6dB/oct)
A 1-pole (-6db/oct) dynamic LPF with no Resonance, designed to be used in combination with an HPF (High Pass Filter).



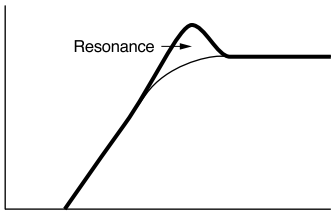
• HPF (High Pass Filter)
This only passes signals above the Cutoff frequency. You can then use the Reso (Resonance) parameter to add further character to the sound. Two types of HPF are available.



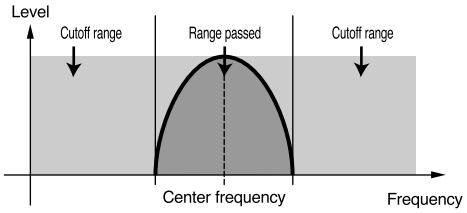
HPF24D (High Pass Filter 24dB/oct Digital),
A 4-pole (-24db/oct) dynamic HPF with a strong Resonance.



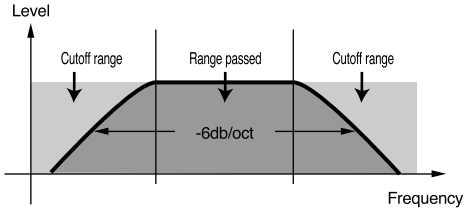
HPF12(High Pass Filter 12dB/oct),
A 2-pole (-12db/oct) dynamic HPF.



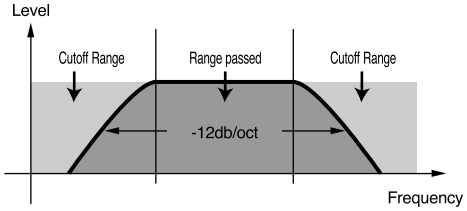
• BPF (Band Pass Filter)
This only passes a band of signals around the Cutoff frequency. The width of this band can be varied. Three types of BPF are available.



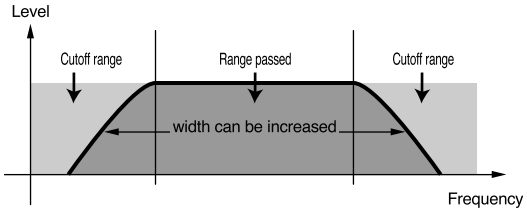
BPF6 (Band Pass Filter 6dB/oct)
The combination of a -6dB/oct HPF and LPF.



BPF12D (Band Pass Filter 12dB/oct Digital)
The combination of a -12dB/oct HPF and LPF.

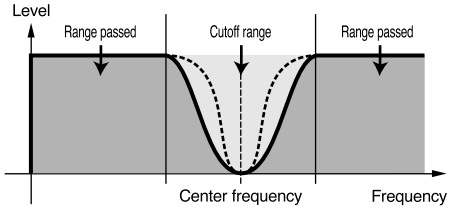


BPFW (Band Pass Filter Wide)
Also the combination of a –12dB/oct HPF and LPF, but can have a wider frequency band than the BPF12D filter.



• BEF (Band Elimination Filter)
This attenuates a band of signals around the Cutoff frequency, but passes everything else.

BEF6 (Band Elimination Filter 6dB/oct)



• THRU
The filters are bypassed and the entire signal is unaffected.

■ Gain

Set the Gain (the amount of boost applied to the signal sent to the Filter Unit).

❑ **Settings:** 0 ~ 255

■ **Cutoff**
Set the Cutoff frequency. This is used as the basic frequency for the selected Filter Type.

❑ **Settings:** 0 ~ 255

■ **Reso (Resonance)/Band/Width**
This parameter's function varies according to the selected Filter Type. If an LPF or HPF has been selected, this parameter is used to set the Resonance. For the BPF (excluding the BPFW) and the BEF, it is used to select the Band. For the BPFW, it is used to adjust the Width of the band.

With the LPF and HPF, the Reso parameter is used to set the amount of Resonance (harmonic emphasis) applied to the signal at the Cutoff frequency. This can be used in combination with the Cutoff frequency parameter to add further character to the sound.

With the BPF, the Band parameter is used to set the range (band) of signal frequencies passed by the filter. With the BEF, it is used to set the band of signal frequencies attenuated by the filter. In both cases, the Cutoff frequency is the center frequency of the band.

With the BPFW, the Width parameter is used to adjust the width of the band of signal frequencies passed by the filter.

❑ **Settings:** 0 ~ 31

FLT HPF (High Pass Filter)

You can set the Key Follow parameters for the High Pass Filter. This screen is available only when you have one of the "LPF + HPF" settings for the Type parameter in the Filter Type (FLT Type) screen.

■ **Cutoff**
Set the center frequency of the Key Follow parameter.

❑ **Settings:** 0 ~ 255

■ **KeyFlw (Key Follow)**
Set the Key Follow for the HPF Cutoff. This parameter varies the center frequency according to the position of the notes played on the keyboard. A positive setting will raise the center frequency for higher notes and lower it for lower notes. A negative setting will have the opposite effect.

❑ **Settings:** -200% ~ 0 ~ +200%

FLT Sens (Filter Sensitivity)

You can set Filter Sensitivity parameters for each Element.

■ **EGDepth**
Set the sensitivity of the Filter to note velocity. A positive setting will produce large filter changes for notes played harder, and a setting of zero will produce no filter changes at all. With a negative setting, the EG envelope will be inverted.

❑ **Settings:** -64 ~ 0 ~ +63

■ **VelCutoff (Velocity Cutoff)**
Set the sensitivity of the Cutoff frequency to note velocity. A positive setting will raise the Cutoff frequency for notes played harder, and lower it for notes played more softly. A negative setting will have the opposite effect.

❑ **Settings:** -64 ~ 0 ~ +63

■ **VelReso (Velocity Resonance)**
Set the sensitivity of the selected Resonance parameter to note velocity. A positive setting will produce large Resonance changes for notes played harder, and smaller changes for notes played more softly. A negative setting will have the opposite effect.

❑ **Settings:** -64 ~ 0 ~ +63

FEG VelSens (FEG Velocity Sensitivity)

You can set parameters controlling the sensitivity of the Filter Envelope Generator (FEG) to note velocity.

■ **Level**
Set the sensitivity of the FEG's Level (its effectiveness) to note velocity. A positive setting will cause larger tonal changes for notes played harder and smaller changes for notes played more softly. A negative setting will have the opposite effect.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Time-Segment**
Set the velocity sensitivity of the FEG's Time parameters. Use Knob [2] to select the Segment, then use Knob [1] to set its Time parameter. Positive Time settings will play back the specified Segment faster and negative values will play it back slower.

❑ **Settings (Time):** -64 ~ 0 ~ +63

❑ **Settings (Segment):**
attack:
Affects the Hold Time/Attack Time/Decay 1 Time
all:
Affects all FEG Time parameters

FEG Time

You can set various Time parameters for the Filter Envelope Generator (FEG). Combined with the FEG Level and FEG Release settings, these can be used control the change in sound from the moment a note is pressed on the keyboard to the moment it is released. You can set different values for each Element.

```
FEG▣Time)  Hold  Attack  Decay1  Decay2
EL1234      127     127     127     127
```

■ **Hold (Hold Time)**
Set the Hold Time.

❑ **Settings:** 0 ~ 127

■ **Attack (Attack Time)**
Set the Attack Time.

❑ **Settings:** 0 ~ 127

■ **Decay1 (Decay 1 Time)**
Set the Decay 1 Time.

❑ **Settings:** 0 ~ 127

■ **Decay2 (Decay 2 Time)**
Set the Decay 2 Time.

❑ **Settings:** 0 ~ 127

FEG Level

You can set a Level parameter for the Filter Envelope Generator (FEG). Combined with the FEG Time and FEG Release settings, these can be used control the change in sound from the moment a note is pressed on the keyboard to the moment it is released. You can set different values for each Element.

```
FEG▣Level) Hold  Attack  Decay1 Sustain
EL1234     +127   -128    +127     +  0
```

■ **Hold (Hold Level)**
Set the Hold Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-9600 cents ~ 0 ~ +9600 cents)

■ **Attack (Attack Level)**
Set the Attack Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-9600 cents ~ 0 ~ +9600 cents)

■ **Decay1 (Decay 1 Level)**
Set the Decay 1 Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-9600 cents ~ 0 ~ +9600 cents)

■ **Sustain (Sustain Level)**
Set the Sustain Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-9600 cents ~ 0 ~ +9600 cents)

FEG Release

You can set Release Time and Release Level parameters for the Filter Envelope Generator (FEG). Combined with the FEG Time and FEG Level settings, these can be used control the change in sound from the moment a note is released.

```
FEG▣Release)                Time   Level
EL1234                       127    +127
```

■ **Time (Release Time)**
Set the Release Time.

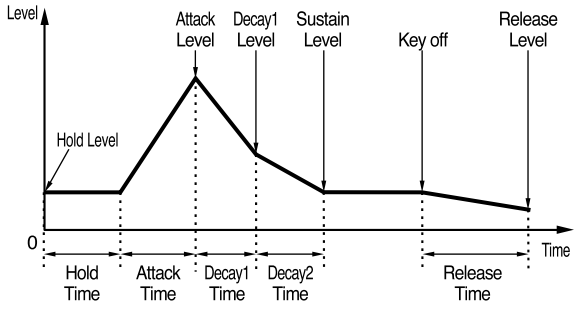
❑ **Settings:** 0 ~ 127

■ **Level (Release Level)**
Set the Release Level.

❑ **Settings:** -128 ~ 0 ~ +127 (-9600 cents ~ 0 ~ +9600 cents)

Filter Envelope Generator Settings

There are five Time settings (controlling the speed of changes to the sound) and five Level settings (controlling the amount of filtering applied). The tone of a note is held at the Hold Level for the length of time defined by the Hold Time. After the Hold Time has elapsed, the tone changes in accordance with the Attack Time/Level, Decay 1/2 Time and the Decay 1 Level, then settles at the Sustain Level. When the note is released, the change in tone is governed by the Release Time/Level settings.
Velocity Sensitivity and other parameters can also be set if required.



FLT KeyFlw (Filter Key Follow)

You can set Filter Key Follow parameters for each Element. This parameter controls the Filter Cutoff and FEG behavior according to the position of the notes played on the keyboard.

NOTE The availability of the Filter Key Follow parameter depends on the Break Point and Offset settings in the FLT Scale screen.

```
FLT▣KeyFlw)Cutoff-Center EGTime--Center
EL1234      +200%   (C 3)      63      C 3
```

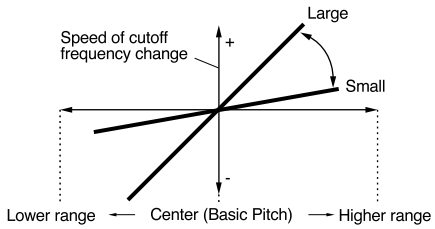
■ Cutoff

Set the Filter Key Follow ratio (the amount by which the Filter Cutoff varies according to note position) for each Element. A Center Key setting of C3 is used as the basic setting by the Cutoff parameter.
A positive setting will lower the Cutoff frequency for lower notes and raise it for higher notes. A negative setting will have the opposite effect.

❑ **Settings:** -200 % ~ 0 ~ +200 %

■ Center (Center Key)

This shows that the basic Level is at note C3. At this note, the tone remains unchanged. For other notes, the tone varies according to the Level settings. The Center setting cannot be changed. This parameter is for information only.



■ EGTime

Set the Time Scale (the speed of change in the FEG over the range of the keyboard) for each Element. The basic speed of change for the FEG is at the note specified in the Center parameter.
A positive setting will cause slower changes for lower notes and faster changes for higher notes. A negative setting will have the opposite effect.

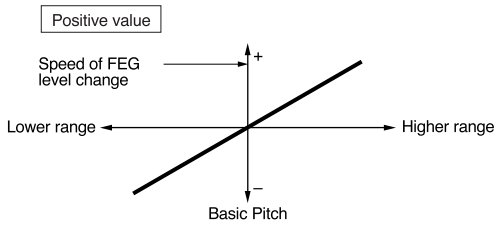
❑ **Settings:** -64 ~ 0 ~ +63

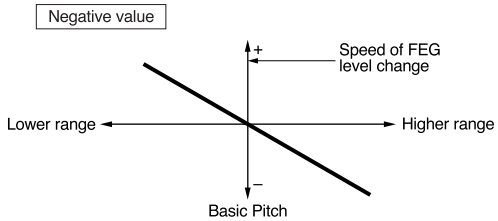
■ Center (Center Key)

Set the basic note used by the EGTime parameter. When the Center Key note is played, the FEG behaves according to its actual settings. The pitch change characteristics for other notes will vary in proportion to the EGTime settings.

❑ **Settings:** C-2 ~ G8

NOTE You can also set this parameter by pressing the respective note on the keyboard while holding down the [SHIFT] key.

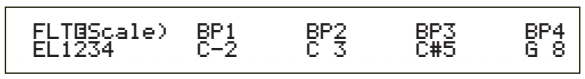




FLT Scale (Filter Scale Break Point)

You can set four Filter Scaling Break Points for each Element. Filter Scaling controls the filter cutoff frequency according to the positions of the notes on the keyboard. There are four Break Points used to divide and assign different settings across the keyboard. The Levels (Offsets) at each of Break Point are set in the FLT Scale screen.

NOTE Details about Filter Scaling are given later in the section "Filter Scaling Settings."

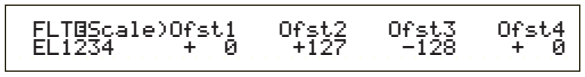


■ BP1/BP2/BP3/BP4 (Break Point 1/2/3/4)

Set the Break Points for each Element. BP1 to BP4 will be automatically be arranged in ascending order across the keyboard.

❑ **Settings:** BP1 to BP4: C-2 ~ G8

FLT Scale (Filter Scale Offset)



■ Ofst1/Ofst2/Ofst3/Ofst4 (Offset 1/2/3/4)

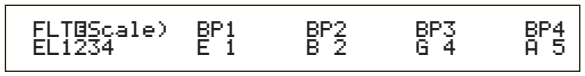
Set the Filter Scaling Offset Levels. These Offsets are used by the Break Points (BP1/BP2/BP3/BP4).

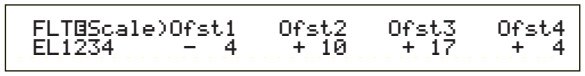
NOTE Details about Filter Scaling are given below in the section "Filter Scaling Settings."

❑ **Settings:** Ofst1 to Ofst4: -128 ~ 0 ~ +127

Filter Scaling Settings

By way of example, you could set the Levels (Offsets) and Break Points (BP1 to BP4) as follows.





Here, the current Cutoff setting is 64. The Offsets are –4 at BP1 (set to note E1), +10 at BP2 (set to note B2), +17 at BP3 (set to note G4) and +4 at BP4 (set to A5). That is, the Cutoff frequencies at each Break Point are 60, 74, 81 and 68, respectively. For other notes, the Cutoff frequencies will be on the straight line connecting the two adjacent Break Points.

NOTE The Break Points are automatically arranged in ascending order across the keyboard. For example, BP2 cannot be set to a lower note than that of BP1.

NOTE The Break Point Levels are Offsets used to increase or decrease the current Cutoff setting at the specified notes. Regardless of the size of these Offsets, the minimum and maximum Cutoff limits (values of 0 and 127, respectively) cannot be exceeded.

NOTE A note set below the BP1 will become the BP1 Level. A note set above BP4 will become the BP4 Level.

Element Amplitude

You can set Amplitude parameters to affect the output level of each Element. The following seven screens are available.

AEG VelSens (AEG Velocity Sensitivity)
AEG Time
AEG Level
AEG Release
AMP KeyFlw (AMP Key Follow)
AMP Scale (AMP Scale Break Point)
AMP Scale (AMP Scale Offset)

AEG VelSens (AEG Velocity Sensitivity)

You can set the sensitivity of the Amplitude Envelope Generator (AEG) to note velocity.

■ **Level**
Set the sensitivity of the AEG's Level (its effectiveness) to note velocity. A positive setting will cause larger output level changes for notes played harder and smaller changes for notes played more softly. A negative setting will have the opposite effect.

❑ **Settings:** -64 ~ 0 ~ +63

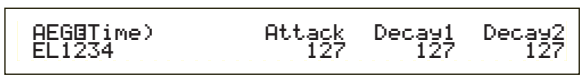
■ **Time-Segment**
Set the velocity sensitivity of the AEG's Time parameters. Use Knob [2] to select the Segment, then use Knob [1] to set its Time parameter. Positive Time settings will play back the specified Segment faster and negative values will play it back slower.

❑ **Settings (Time):** -64 ~ 0 ~ +63

❑ **Settings (Segment):**
attack:
Affects the Hold Time/Attack Time/Decay 1 Time
all:
Affects all AEG Time parameters

AEG Time

You can set various Time parameters for the Amplitude Envelope Generator (AEG). Combined with the AEG Level and AEG Release settings, these can be used control the change in output level from the moment a note is pressed on the keyboard to the moment it is released. You can set different values for each Element.



■ **Attack (Attack Time)**
Set the Attack Time.

❑ **Settings:** 0 ~ 127

■ **Decay1 (Decay 1 Time)**
Set the Decay 1 Time.

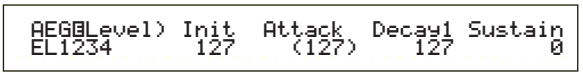
❑ **Settings:** 0 ~ 127

■ **Decay2 (Decay 2 Time)**
Set the Decay 2 Time.

❑ **Settings:** 0 ~ 127

AEG Level

You can set various Level parameters for the Amplitude Envelope Generator (AEG). Combined with the AEG Time and AEG Release settings, these can be used control the change in output level from the moment a note is pressed on the keyboard to the moment it is released. You can set different values for each Element.



■ **Init (Initial Level)**
Set the Initial Level. (The Level when a key is pressed.)

❑ **Settings:** 0 ~ 127

■ **Attack (Attack Level)**
This shows the Attack Level. (Fixed at 127.)

■ **Decay1 (Decay 1 Level)**
Set the Decay 1 Level.

❑ **Settings:** 0 ~ 127

■ **Sustain (Sustain Level)**
Set the Sustain Level.

❑ **Settings:** 0 ~ 127

AEG Release

You can set Release Time and Release Level parameters for the Amplitude Envelope Generator (AEG). Combined with the AEG Time and AEG Level settings, these can be used control the change in output level from the moment a note is released. You can set different values for each Element.

■ **Time (Release Time)**
Set the Release Time.

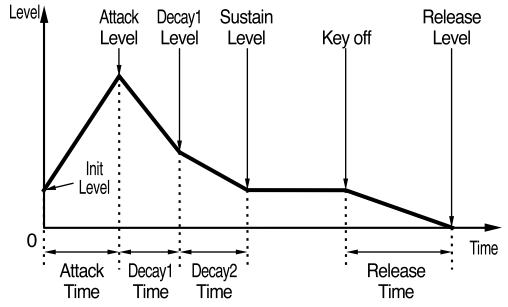
❑ **Settings:** 0 ~ 127

■ Level (Release Level)

This shows the Release Level. (Fixed at zero.)

Amplitude Envelope Generator Settings

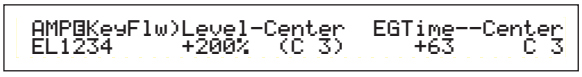
There are four Time settings (controlling the speed of changes in output level) and five Level settings (controlling the output level). The output level changes from the Initial Level to the Attack Level (127) within the Attack Time. It then changes in accordance with the Decay 1/2 Time and the Decay 1 Level, and settles at the Sustain Level. When the note is released, the output level falls to the Release Level (zero) within the Release Time.
Velocity Sensitivity and other parameters can also be set if required.



AMP KeyFlw (AMP Key Follow)

You can set Amplitude Key Follow parameters for each Element. This parameter controls the AEG behavior according to the positions of notes on the keyboard.

NOTE The availability of the Amplitude Key Follow parameter depends on the Break Point and Offset settings in the AEG Scale screen.



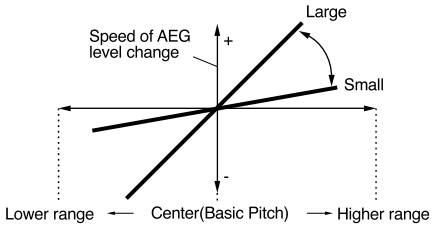
■ Level

Set the Amplitude Key Follow ratio (the amount by which the output level varies according to note position) for each Element. A Center setting of C3 is used as the basic setting.
A positive setting will lower the output level for lower notes and raise it for higher notes. A negative setting will have the opposite effect.

❑ **Settings:** -200 % ~ 0 ~ +200 %

■ Center (Center Key)

This shows that the basic Level is at note C3. At this note, the output level remains unchanged. For other notes, the output levels vary according to the Level settings. The Center setting cannot be changed.



■ EGTime

The EGTime parameter controls the AEG Times for each Element according to the positions of the notes on the keyboard. The Center parameter is used as the basic amplitude for this parameter.
A positive setting will cause the amplitude of lower notes to change slower and that of higher notes to change faster. Negative values will have the opposite effect.

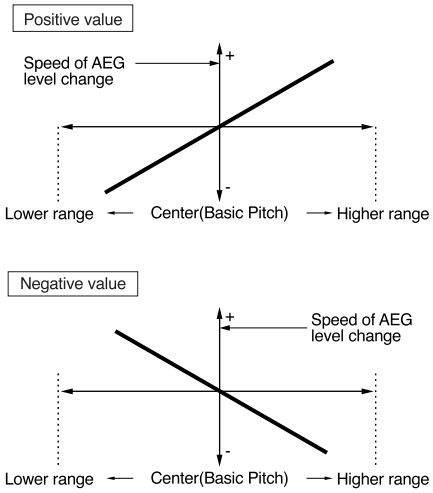
❑ **Settings:** -64 ~ 0 ~ +63

■ Center (Center Key)

Set the basic pitch used by the EGTime parameter. When the Center note is played, the AEG behaves according to its actual settings. The amplitude change characteristics for other notes will vary in proportion to the EGTime settings.

❑ **Settings:** C-2 ~ G8

NOTE You can also set this parameter by pressing the respective note on the keyboard while holding down the [SHIFT] key.



AMP Scale (AMP Scaling Break Point)

You can set four Amplitude Scaling Break Points for each Element. Amplitude Scaling controls the amplitude according to the positions of the notes on the keyboard. There are four Break Points used to divide and assign different settings across the keyboard. The Levels (Offsets) at each of Break Point are set in the AMP Scale screen.

NOTE Details about Amplitude Scaling are given later in the section "Amplitude Scaling Settings."

NOTE The Levels of the Elements themselves are set in the OSC Out screen (Page 89).

```
AMP@Scale)  BP1     BP2     BP3     BP4
EL1234      C-2     C 3     C#5     G 8
```

■ **BP1/BP2/BP3/BP4 (Break Point1/2/3/4)**
Set the Break Points for each Element. BP1 to BP4 will automatically be arranged in ascending order across the keyboard.

❑ **Settings:** BP1 to BP4: C-2 ~ G8

NOTE You can also set each Break Point by pressing the respective note on the keyboard while holding down the [SHIFT] key.

AMP Scale (AMP Scaling Offset)

```
AMP@Scale)Ofst1   Ofst2   Ofst3   Ofst4
EL1234      +  0    +127    -128    +  0
```

■ **Ofst1/Ofst2/Ofst3/Ofst4 (Offset 1/2/3/4)**
Set the Amplitude Scaling Offset Levels. These Offsets are used by the Break Points (BP1/BP2/BP3/BP4).

NOTE Details about Amplitude Scaling are given later in the section "Amplitude Scaling Settings."

❑ **Settings:** Ofst1 to Ofst4: -128 ~ 0 ~ +127

Amplitude Scaling Settings

By way of example, you could set the Levels (Offsets) and Break Points (BP1 to 4) as follows.

```
AMP@Scale)  BP1     BP2     BP3     BP4
EL1234      E 1     B 2     G 4     A 5
```

```
AMP@Scale)Ofst1   Ofst2   Ofst3   Ofst4
EL1234      -  4    + 10    + 17    +  4
```

Here, the current amplitude is 80. The Offsets are –4 at BP1 (set to note E1), +10 at BP2 (set to note B2), +17 at BP3 (set to note G4) and +4 at BP4 (set to A5). That is, the amplitudes at each Break Point are 76, 90, 97 and 84, respectively. For other notes, the amplitudes will be on the straight line connecting the two adjacent Break Points.

NOTE The Break Points are automatically arranged in ascending order across the keyboard. For example, BP2 cannot be set to a lower note than that of BP1.

NOTE The Break Point Levels are Offsets used to increase or decrease the current amplitude at the specified notes. Regardless of the size of these Offsets, the minimum and maximum amplitude limits (values of 0 and 127, respectively) cannot be breached.

NOTE A note set below the BP1 will become the BP1 Level. A note set above BP4 will become the BP4 Level.

Element LFO (Low Frequency Oscillator)

There are various settings for the LFO. The LFO is used to generate low frequency signals and can be used to create vibrato/wah/tremolo/etc. effects when applied to pitch/filter/amplitude parameters. Different LFO parameters can be set for each Element. The following two screens are available.

LFO Wave
LFO Depth

LFO Wave

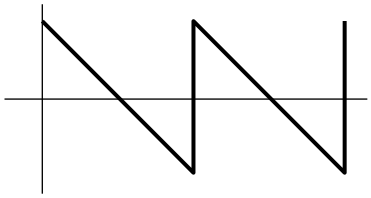
You can set various parameters controlling the LFO waveform. Select the waveform used by the LFO and set the speed of change.

```
LFO@Wave)  Wave^v Speed          KeySync
EL1234     tri       63              on
```

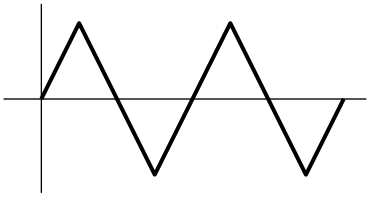
■ **Wave**
Select the LFO waveform used to vary the sound. There are three waveforms available.

❑ **Settings:** saw, tri, squ

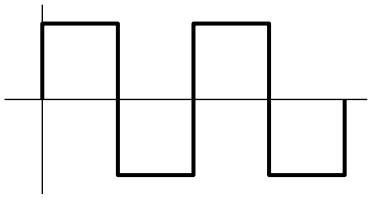
saw (sawtooth wave)



tri (triangle wave)



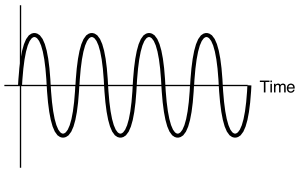
squ (square wave)



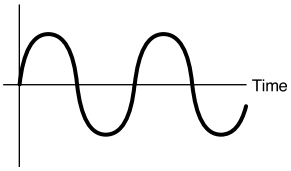
■ **Speed**
Set the speed of the LFO waveform. A larger setting means a faster speed.

❑ **Settings:** 0 ~ 63

Speed = Fast

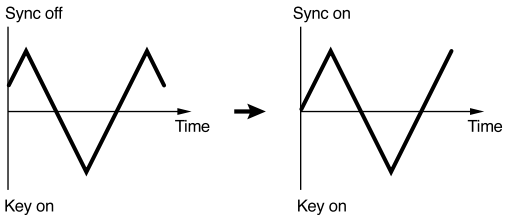


Speed = Slow



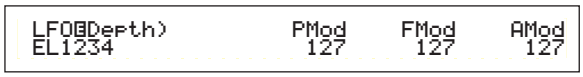
■ **KeySync**
Switch Key Sync on or off. When switched on, the LFO waveform is reset every time a note is played.

❑ **Settings:** off, on



LFO Depth

Set the amount by which the LFO waveform controls changes in Pitch/Filter/Amp settings.



■ **PMod (Pitch Modulation Depth)**
Set the amount (depth) by which the LFO waveform varies (modulates) the pitch of the sound. A larger setting means a larger modulation depth.

❑ **Settings:** 0 ~ 127

■ **FMod (Filter Modulation Depth)**
Set the amount (depth) by which the LFO waveform varies (modulates) the Filter Cutoff frequency. A larger setting means a larger modulation depth.

❑ **Settings:** 0 ~ 127

■ **AMod (Amplitude Modulation Depth)**
Set the amount (depth) by which the LFO waveform varies (modulates) the amplitude of the sound. A larger setting means a larger modulation depth.

❑ **Settings:** 0 ~ 127

Element EQ (Equalizer)

You can set the following two Equalizer parameters for each Element.

EQ Type
EQ Param (EQ Parameter)

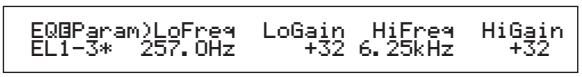
EQ Type

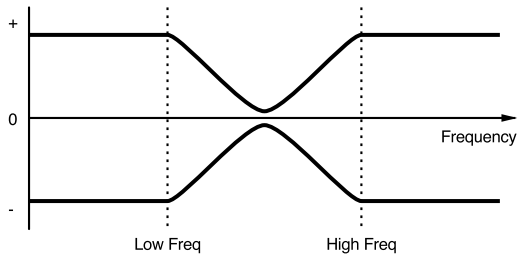
■ **Type**
Select the Equalizer Type. Various Equalizers are available which can be used not just for altering existing sounds, but also in generating completely new sounds.
Some items in the following EQ Param (EQ Parameter) screen may or may not be available, depending on the selected Equalizer Type

❑ **Settings:** EQ L/H (EQ Low/High), P.EQ (Parametric EQ), Boost6 (Boost 6dB), Boost12 (Boost 12dB), Boost18 (Boost 18dB), thru

The parameters for the Filter Type are as follows.

• **EQ L/H (EQ Low/High)**
This is a Shelving Equalizer which combines a High Frequency and Low Frequency Band to adjust the signal Level. If you select this Filter, the EQ Parameter screen will be available with the following parameters.





■ LoFreq (Low Frequency)
Set the low frequency of the Shelving filter. Frequencies below this point are attenuated or boosted by the Low Gain parameter.

❑ **Settings:** 50.1Hz ~ 2.00kHz

■ LoGain (Low Gain)
Set the amount by which the frequencies below the Low Frequency setting are attenuated or boosted.

❑ **Settings:** -32 ~ 0 ~ +32

■ HiFreq (High Frequency)
Set the high frequency of the Shelving filter. Frequencies above this point are attenuated or boosted by the High Gain parameter.

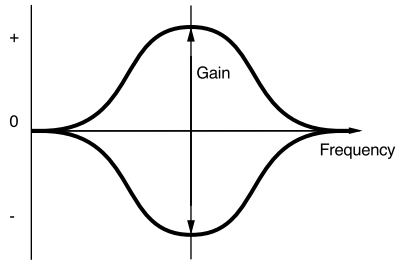
❑ **Settings:** 503.8Hz ~ 10.1kHz

■ HiGain (High Gain)
Set the amount by which the frequencies above the High Frequency setting are attenuated or boosted.

❑ **Settings:** -32 ~ 0 ~ +32

- **P.EQ (Parametric EQ)**
  The Parametric EQ is used to attenuate or boost signal levels around the Frequency setting by the amount specified in the Gain setting. 32 different Frequency Characteristics are available. The following parameters are available for this type of Equalizer.

EQ Param (EQ Parameter)



■ Freq (Frequency)
Set the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

❑ **Settings:** 139.7Hz ~ 12.9kHz

■ Gain
Set the Gain. This attenuates or boosts frequencies around the Frequency setting.

❑ **Settings:** -32 ~ 0 ~ +32

■ Q (Frequency Characteristic)
Set the Q (Frequency Characteristic). 32 different Characteristics are available.

❑ **Settings:** 0 ~ 31

- **Boost6 (Boost 6dB)/Boost12 (Boost 12dB)/ Boost18 (Boost 18dB)**
  These can be used to boost the level of the entire signal by 6dB, 12dB and 18dB, respectively. The EQ Parameters will be unavailable.

- **thru**
  If you select this, the equalizers are bypassed and the entire signal is unaffected.

Drum Voices

With Drum Voices, different drum and percussion Waves or Normal Voices are assigned to notes across the keyboard (from C0 to C6) forming an entire drum kit. For editing Drum Voices, there are five Common Edit screens (affecting all the Drum Voices together) and the five Drum Key screens.

When you select a Drum Voice and enter Voice Edit Mode, you will see the Drum Voice Edit screen at which you were previously editing.

NOTE An overview of the Drum Voices is given on Page 37.

Most parameters have already been explained for Normal Voices. (The gray items in the tree diagram.) Those parameters not previously covered are explained here.

NOTE Details about the functions common to both Drum Voices and Normal Voices are given in the section “Normal Voices” (Page 79).

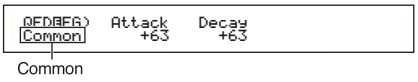
Voice Edit (Drum)
- Drum Common
  - Drum Common General — 80
    - GEN Name (General Name) — 80
  - Drum Common Quick Edit — 81
    - QED Level (Quick Edit Level) — 81
    - QED EffectCtrl (Quick Edit Effect) — 81
    - QED Filter (Quick Edit Filter) — 82
    - QED EG (Quick Edit Envelope Generator) — 103
  - Drum Common Arpeggio — 82
    - ARP Type (Arpeggio Type) — 82
    - ARP Limit (Arpeggio Note Limit) — 83
    - ARP Mode (Arpeggio Mode) — 83
    - ARP PlayEF (Arpeggio Play Effects) — 83
  - Drum Common Controllers — 84
    - CTL Bend (Pitch Bend) — 84
    - CTL Set1 (Control Set 1) — 84
    - CTL Set2 (Control Set 2) — 84
    - CTL Set3 (Control Set 3) — 84
    - CTL Set4 (Control Set 4) — 84
    - CTL Set5 (Control Set 5) — 84
    - CTL Set6 (Control Set 6) — 84
  - Drum Common Effects — 88
    - EFF InsEF (Insertion Effects) — 88
    - EFF EF1 (Insertion Effect 1) — 88
    - EFF EF2 (Insertion Effect 2) — 88
    - EFF Rev (Reverb) — 89
    - EFF Cho (Chorus) — 89
- Drum Key
  - Drum Key OSC (Oscillator) — 104
    - OSC Wave (Oscillator Wave) — 104
    - OSC Out (Oscillator Out) — 105
    - OSC Pan (Oscillator Pan) — 105
    - OSC Other (Oscillator Other) — 105

Drum Key Pitch ——— 106
PCH Tune (Pitch Tune) ——— 106
Drum Key Filter ——— 106
FLT Cutoff (Filter Cutoff) ——— 106
Drum Key Amplitude ——— 106
AMP AEG (Amplitude Envelope Generator) ——— 107
AMP VelSens (Amplitude Velocity Sensitivity) ——— 107
Drum Key EQ (Equalizer) ——— 101
EQ Type (EQ Type) ——— 101
EQ Param (EQ Parameter) ——— 101

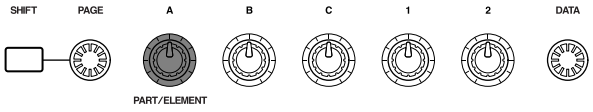
Drum Common Edit and Drum Key Edit

Each Drum Voice consists of multiple Waves or Normal Voices assigned to notes across the keyboard (C0 to C6) (Page 37). You can use Drum Common Edit for settings that apply to all Drum Keys in the Drum Voice. For individual Waves or Normal Voices settings, Drum Key Edit consists of Edit screens for each Wave or Normal Voice. With Drum Voice Edit, you can use Knob [A] to switch between the Drum Common Edit and Drum Key Edit screens.

Drum Common settings

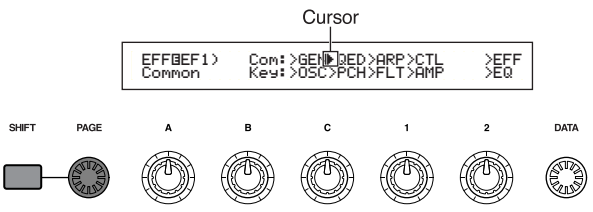


Drum Key settings



Menu Display

The following is displayed if you turn the [PAGE] knob while holding down the [SHIFT] key. The menus for the settings are shown below. Use the [PAGE] knob to move the cursor to the item you are looking for. Then release the [SHIFT] key to jump to the screen at which you were previously editing the item.



NOTE The [PROGRAM/PART] keys on the CS6x can directly select Menus associated to them (Page 80).

Drum Common General

For Drum Voices, there is only the one type of Common General parameter shown below. The parameter settings is the same as for Normal Voices. Details are given on Page 80.

GEN Name (General Name)

Drum Common Quick Edit

The following four screens are available for Drum Voice output level and timbre parameters. These can also be edited using the Sound Control knobs on the CS6x front panel.

QED Level (Quick Edit Level)
QED EffectCtrl (Quick Edit Effect)
QED Filter (Quick Edit Filter)
QED EG (Quick Edit Envelope Generator)

QED Level (Quick Edit Level)

Most parameters and settings have already been explained for Normal Voices. Details are given on Page 81.

QED EffectCtrl (Quick Edit Effect)

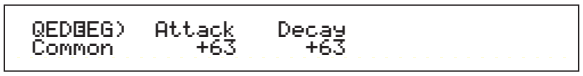
Most parameters and settings have already been explained for Normal Voices. Details are given on Page 81.

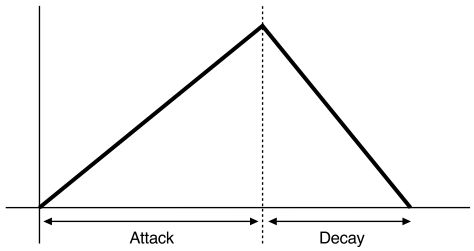
QED Filter (Quick Edit Filter)

Most parameters and settings have already been explained for Normal Voices. Details are given on Page 82.

QED EG (Quick Edit Envelope Generator)

The EG (Envelope Generator) can be used to set the transition in the Drum Voice output level over time. The EG has two parameters determining how the output level of the sound changes from the point at which a note is pressed to the point at which the sound has completely faded out.





■ **Attack**
Set the Attack time (the time from the moment the note is pressed to the point at which the maximum sound output level is reached). The [ATTACK] knob on the CS6x front panel can also be used to directly adjust the Attack time.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Decay**
Set the Decay time (the time from the point of maximum sound output level to the point at which it has completely faded out). The [DECAY] knob on the CS6x front panel can also be used to directly adjust the Decay time.

❑ **Settings:** -64 ~ 0 ~ +63

Drum Common Arpeggio

The following four screens are available for Drum Voice arpeggio parameters. The parameters and settings are the same as for Normal Voices. Details are given on Page 82.

ARP Type (Arpeggio Type)
ARP Limit (Arpeggio Note Limit)
ARP Mode (Arpeggio Mode)
ARP PlayEF (Arpeggio Play Effect)

Drum Common Controllers

Set your Controller Settings here. Up to six controllers plus the Pitch Bend wheel can be assigned to each Drum Voice. The following seven screens are available. (The parameter names for all Control Set screens are the same.)

CTL Bend (Pitch Bend)
CTL Set1 (Control Set 1)
CTL Set2 (Control Set 2)
CTL Set3 (Control Set 3)
CTL Set4 (Control Set 4)
CTL Set5 (Control Set 5)
CTL Set6 (Control Set 6)

The parameters are the same as for Normal Voices. Details are given on Page 84. (The Elem Sw parameter is only available for Normal Voices.)

Drum Common Effects

For Drum Voice Effects, there are two Insertion Effects, plus System Effects (Reverb and Chorus). The following five screens are available. The parameters and settings are the same as for Normal Voices. Details are given on Page 88.

EFF InsEF (Insertion Effect)
EFF EF1 (Insertion Effect 1)
EFF EF2 (Insertion Effect 2)
EFF Rev (Reverb)
EFF Cho (Chorus)

Drum Key OSC (Oscillator)

You can change your Drum Voice waveform settings. Each Drum Voice can consist of up to 73 Drum Keys (Page 37), assigned to notes spread across the keyboard (C0 to C6). You can assign waveforms to Drum Keys and set their parameters. The following four screens are available.

OSC Wave (Oscillator Wave)
OSC Out (Oscillator Out)
OSC Pan (Oscillator Pan)
OSC Other (Oscillator Other)

OSC Wave (Oscillator Wave)

Assign a Wave/Normal Voice to each Drum Key. Use Knob [A] (or press a note on the keyboard) to select the Drum Key, and use Knob [C] to select the Wave/Normal Voice assigned to it.

■ **Mem (Memory)**
This is displayed when you have selected "vce" (Normal Voice) as the Type parameter. Select the Voice Memory for the Normal Voice.

❑ **Settings:** PRE1, PRE2, INT, EXT

NOTE You cannot select Plug-in Voices.

■ **Number (Wave Number)**
Select a Wave/Normal Voice Number. The Category and Name are shown to the right of the selected Wave/Normal Voice Number. The selection of Waves/Normal Voices varies according to the Type.

❑ **Settings:** 000 (off) ~ 479 for wave, 001 ~ 128 for Normal Voice (Details about each Wave/Normal Voice are given in the separate Data List).

NOTE If you choose "off," no Wave/Normal Voice will be assigned to the Drum Key.

■ **Ctgry (Category)**
Select the Category of the Wave/Normal Voice. If you switch to another Category, the first Wave/Normal Voice in that Category will be selected.

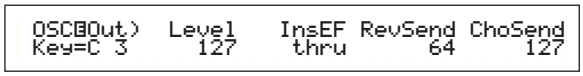
❑ **Settings:** Details about the Categories are given as a list on Page 80.

■ **Type**
Select Wave or Normal Voice as the Type. With the Number and Ctgry parameters (above), you can specify the waveform or Normal Voice used by the Type.

❑ **Settings:** wave, vce (Normal Voice)

OSC Out (Oscillator Out)

Set the Wave or Normal Voice output settings for each Drum Key.



■ Level

Set the output level for each Wave or Normal Voice. This can be used to adjust the output of each Drum Key.

❑ **Settings:** 0 ~ 127

■ InsEF (Insertion Effect)

Select the Insertion Effect to which the output of each Drum Key will be sent. If Thru is selected, the Insertion Effects are bypassed.

❑ **Settings:** thru, ins1 (Insertion Effect 1), ins2 (Insertion Effect 2)

■ RevSend (Reverb Send)

Set the Send level of the Drum Key signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect.

❑ **Settings:** 0 ~ 127

NOTE This setting plus the Reverb Send level set in the QED Level screen (Page 81) are the final Reverb Send level settings.

NOTE Details about the Effects are given on Page 65.

■ ChoSend (Chorus Send)

Set the Send level of the Drum Key signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect.

❑ **Settings:** 0 ~ 127

NOTE This setting plus the Chorus Send level set in the QED Level screen (Page 81) are the final Chorus Send level settings.

NOTE For a Drum Key with the Insertion Effect set to other than Thru, the Chorus Send level will be determined by the QED Level screen.

NOTE Details about the Effects are given on Page 65.

OSC Pan (Oscillator Pan)

Assign Pan settings for each Drum Key in the Drum Voice. Different Pan types are available.

NOTE The Pan, Alter (Alternate) and Random settings will be ignored if you set the Output to "ind1" to "ind6."

■ Pan

Set the Pan position for each sound in a Drum Voice (Drum Kit). This will also be used as the basic Pan position for the Alternate and Random settings.

❑ **Settings:** L63 (Left) ~ C (Center) ~ R63 (Right)

■ Alter (Alternate)

Set the amount by which the sound is panned alternately left and right for each note you press. The Pan setting is used as the basic Pan position.

❑ **Settings:** L64 (Left) ~ 0 (Center) ~ R63 (Right)

NOTE This parameter is only available if the Type parameter in the OSC Wave screen is set to "wave." If set to "vce" (Normal Voice), this parameter is unavailable.

■ Random

Set the amount by which the sound is panned randomly left and right for each note you press. The Pan setting is used as the basic Pan position.

❑ **Settings:** 0 ~ 127

NOTE This parameter is only available if the Type parameter in the OSC Wave screen is set to "wave."

■ Output

Assign each Drum Key to an output.

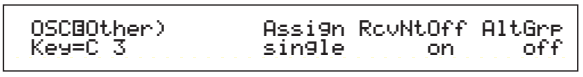
❑ **Settings:** L&R (OUTPUT L & R), ind1&2 (INDIVIDUAL OUTPUT 1 & 2), ind1 (INDIVIDUAL OUTPUT 1), ind2, ind3, ind4, ind5, ind6

NOTE Settings "ind3" to "ind6" are for future expansion purposes and are currently not available.

NOTE For example, if you choose "ind1&2," the left channel will be output through INDIVIDUAL OUTPUT1 and the right channel will be output through INDIVIDUAL OUTPUT2.

OSC Other (Oscillator Other)

You can set parameters which govern the sound of each Drum Key making up the Drum Voice.



■ Assign

Set Key Assign to "single" to prevent the doubled playback of the same received notes. Select "multi" to consecutively assign each instance of the same received note to a separate channel.

❑ **Settings:** single, multi

NOTE When the Alternate Group (AltGrp) parameter is set to other than "off," you cannot set this parameter (shown as "----").

■ RcvNtOff (Receive Note Off)

Select whether MIDI Note Off messages are received by each Drum Key.

❑ **Settings:** off, on

NOTE This parameter depends on the Type of Drum Key Wave chosen in the OSC Wave screen.

■ AltGrp (Alternate Group)

Set the Alternate Group to which the Wave is assigned. In a real drum kit, some drum sounds cannot physically be played simultaneously, such as open and closed hi-hats. You can prevent Waves from playing back simultaneously by assigning them to the same Alternate Group. Up to 127 Alternate Groups can be defined. You can also select "off" here if you wish to allow the simultaneous playback of sounds.

❑ **Settings:** off, 1 ~ 127

Drum Key Pitch

Set the pitch of each Drum Key. The tunings and Pitch EG parameters can be set for each Drum Key.

PCH Tune (Pitch Tune)

■ Coarse

Adjust the pitch of each Drum Key Wave (or Normal Voice) in semitones.

❑ **Settings:** -48 ~ +48

NOTE For a Normal Voice, this parameter adjusts the position of its note (not its pitch) relative to note C3. For example, let's assume the original Voice consists of a two-Element piano-like sound up to note C3 and a two-Element string-like sound from note C#3 upwards. Adjusting this Coarse setting by +1 would not change the pitch of the piano-like sound to C#3. Instead, note C#3 of the original Voice (i.e., the string-like sound) would be used.

■ Fine

Fine-tune the pitch of each Drum Key Wave (or Normal Voice).

❑ **Settings:** -64 ~ +63

■ VelSens (Velocity Sensitivity)

Set the velocity sensitivity of the pitch. Positive settings will cause the pitch to rise the harder you play the keyboard and negative settings will cause it to fall.

❑ **Settings:** -64 ~ 0 ~ +63

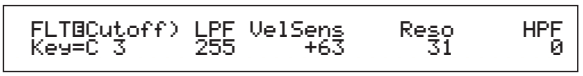
NOTE This parameter is only available if the Type parameter in the OSC Wave screen is set to "wave."

Drum Key Filter

You can apply filter settings to the Drum Voice. A Low Pass Filter and High Pass Filter can be applied per Wave to change its tonal characteristics.

NOTE This parameter is only available if the Type parameter in the OSC Wave screen is set to "wave."

FLT Cutoff (Filter Cutoff)



■ LPF (Low Pass Filter)

Set the Cutoff frequency of the Low Pass Filter. Only frequencies below this point are passed. You can then use the Reso (Resonance) parameter to add further character to the sound.

❑ **Settings:** 0 ~ 255

NOTE Details about the Low Pass Filter are given on Page 93.

■ VelSens (Velocity Sensitivity)

Set the velocity sensitivity of the Low Pass Filter Cutoff frequency. Positive settings will cause the cutoff frequency to rise the harder you play the keyboard and negative settings will cause it to fall.

❑ **Settings:** -64 ~ 0 ~ +63

■ Reso (Resonance)

Set the amount of Resonance (harmonic emphasis) applied to the signal at the Cutoff frequency. This can be used in combination with the Cutoff frequency of the Low Pass Filter to add further character to the sound.

❑ **Settings:** 0 ~ 31

NOTE Details about Resonance are given on Page 40.

■ HPF (High Pass Filter)

Set the Cutoff frequency of the High Pass Filter. Only frequencies above this point are passed.

❑ **Settings:** 0 ~ 255

NOTE Details about the High Pass Filter are given on Page 94.

Drum Key Amplitude

You can set amplitude (output level) parameters for each Drum Key. The following two parameters are available.

NOTE This parameter is only available if the Type parameter in the OSC Wave screen is set to "wave."

AMP AEG (Amplitude Envelope Generator)
AMP VelSens (Amplitude Velocity Sensitivity)

■ AMP AEG (Amplitude Envelope Generator)

The Amplitude Envelope Generator controls the change in amplitude from the moment a note in pressed on the keyboard to the moment it is released. By setting the Attack Time, Decay 1 Time and the Decay 1/2 Level, you can determine how fast the sound reaches its peak amplitude and how it fades out. Parameters can be set for each Drum Key.

NOTE This parameter is only available if the Type parameter in the OSC Wave screen is set to "wave."

```
AMP▯AEG) Attack  Decay1---Level  Decay2
Key=C 3    127     127     127     126
```

■ Attack (Attack Time)

Set the Attack Time.

❑ **Settings:** 0 ~ 127

■ Decay1 (Decay 1 Time)

Set the Decay Time.

❑ **Settings:** 0 ~ 127

■ Level (Decay 1 Level)

Set the Decay 1 Level.

❑ **Settings:** 0 ~ 127

■ Decay2 (Decay 2 Time)

Set the Decay 2 Time.
If you select "hold," the level amplitude will be held until you release the note.

❑ **Settings:** 0 ~ 126, hold

AMP VelSens (Amplitude Velocity Sensitivity)

You can define how the amplitude (output level) varies according to the velocity of the received notes.

```
AMP▯VelSens)                    Level
Key=C 3                          +63
```

■ Level

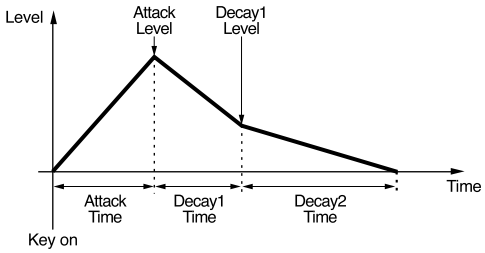
Set the velocity sensitivity of the Amplitude Envelope Generator's output level. Positive settings will cause the output level to rise the harder you play the keyboard and, conversely, negative values will cause it to fall.

❑ **Settings:** -64 ~ 0 ~ +63

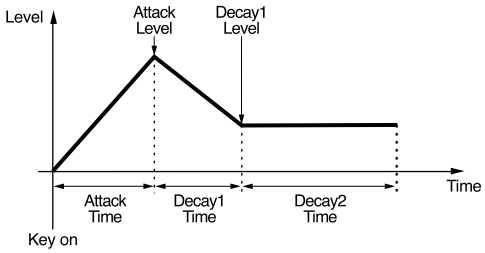
Amplitude Envelope Generator Settings

The Amplitude Envelope Generator has three Time parameters and one Level parameter. These govern the transitions between output levels for the duration of a note. The Attack Time is the time taken for the sound to reach its peak output level from the moment a note is played on the keyboard. The Decay 1/2 Time and the Decay 1 Level parameters are used to set the behavior of the remainder (between the sound's peak output level and the point at which it fades to zero). Furthermore, you can set these parameters to be sensitive to note velocity.

NOTE The Attack Level is fixed at its maximum value.



Decay2 = hold



Drum Key EQ (Equalizer)

You can set Equalizer parameters for each Drum Key. The following two screens are available. These parameters are the same as for Normal Voices; details are given on Page 101.

EQ Type
EQ Param (EQ Parameter)

NOTE This parameter is only available if the Type parameter in the OSC Wave screen is set to "wave."

Plug-in Voices

The Voices held on Plug-in Boards (Single Part) are known as Board Voices. A Plug-in Voice is a Board Voice that has been processed in the synthesizer in Voice Edit Mode. There are six Common Edit screens and four screens for editing the Element of a Plug-in Voice. You can save up to 64 edited Plug-in Voices in Banks A to D of Memory PLG1/2.

After selecting the Plug-in Voice you wish to edit (in Banks A to D of Memory PLG1/2), when you enter Voice Edit Mode, you will see the Voice Edit Mode screen that you had exited from previously.

Monitoring Board Voices

You can monitor Board Voices without having to enter Edit Mode. Also, if you press the [EDIT] key while monitoring, you will enter Edit Mode with the oscillators of the Board Voice already assigned.

1. While holding down the [PLG1] or [PLG2] key, use Knob [C] to select the Board Voice's Bank. "PLG INT" is the Bank of the Plug-in Voice (Plug-in Internal) stored in Memory PLG1/2.
2. Release the [PLG1] or [PLG2] key. Select the Board Voice using the BANK/PROGRAM keys or [DATA] knob as in the same way to select a Voice from another memory.

NOTE If there is no Voice at the Program Number corresponding with the selected Bank, no sound will be produced.

NOTE To edit the Board Voices on the Plug-in Board, you need to use a computer and the included editor software.

NOTE Details about Plug-in Voices and Board Voices are given on Pages 32, 114.

Many parameters are the same as for Normal Voices (the gray items in the tree diagram). Only those items that differ are explained here.

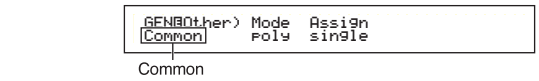
NOTE Details about the other parameters are given in the Normal Voice explanation on Page 79.

Plug-in Voices
- Plug-in Common
  - Plug-in Common General — 80
    - GEN Name (General Name) — 80
    - GEN Other (General Other) — 109
  - Plug-in Common Quick Edit — 81
    - QED Level (Quick Edit Level) — 81
    - QED EffectCtrl (Quick Edit Effect) — 81
    - QED Filter (Quick Edit Filter) — 82
    - QED EG (Quick Edit Envelope Generator) — 109
  - Plug-in Common Arpeggio — 82
    - ARP Type (Arpeggio Type) — 82
    - ARP Limit (Arpeggio Note Limit) — 83
    - ARP Mode (Arpeggio Mode) — 83
    - ARP PlayEF (Arpeggio Play Effect) — 83
  - Plug-in Common Controller — 110
    - CTL Pitch (Pitch Bend) — 110
    - CTL Set1 (Control Set 1) — 110
    - CTL Set2 (Control Set 2) — 110
    - CTL MW Control (MW Control Depth) — 110
    - CTL MW Modulation (MW Modulation Depth) — 110
    - CTL AT Control (AT Control Depth) — 110
    - CTL AT Modulation (AT Modulation Depth) — 111
    - CTL AC Control (AC Control Depth) — 111
    - CTL AC Modulation (AC Modulation Depth) — 111
  - Plug-in Common LFO (Low Frequency Oscillator) — 111
    - LFO Param (LFO Parameter) — 111
  - Plug-in Common Effect — 88
    - EFF InsEF1 (Insertion Effect) — 88
    - EFF Rev (Reverb) — 89
    - EFF Cho (Chorus) — 89
- Plug-in Element
  - Plug-in Element OSC (Oscillator) — 112
    - OSC Assign (Oscillator Assign) — 112
    - OSC Velocity (Oscillator Velocity) — 112
  - Plug-in Element Pitch — 112
    - PCH PEG (Pitch Envelope Generator) — 113
  - Plug-in Element EQ (Equalizer) — 113
    - EQ Param (EQ Parameter) — 113
  - Plug-in Element Native — 113
    - PLG-NATIVE (Plug-in Native) — 113

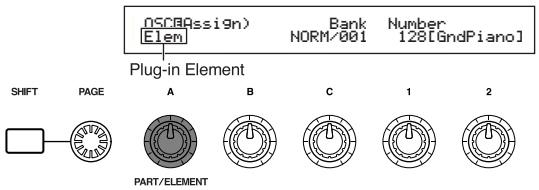
Plug-in Common Edit and Editing Each Element

There are two edit screens for a Plug-in Voice. One is for general Voice settings called Plug-in Common, and the other is for element settings called Plug-in Element. There is only one element available for a Plug-in Voice, but you can make access to parameters in Plug-in Common and Element screens, which are similar to ones for a normal Voice.
In Plug-in Voice editing, you can switch between the Common and Element screens using the Knob [A].

Plug-in Common Edit Screens

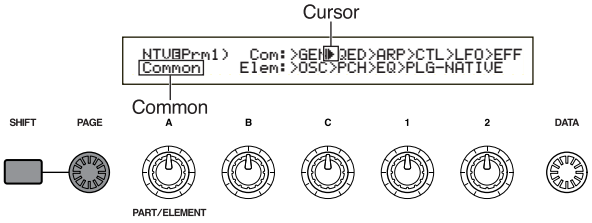


Plug-in Element Edit Screens



Menu Display

When you use the [PAGE] knob while holding down the [SHIFT] key, you will see the following Menu Display. Then use the [PAGE] knob to move the cursor to the desired item and release the [SHIFT] key to jump to the Edit screen for the selected item.



NOTE The [PROGRAM/PART] keys on the CS6x can directly select Menus associated to them (Page 80).

Plug-in Common General

The General parameters are shown in the following two screens.

GEN Name (General Name)
GEN Other (General Other)

GEN Name (General Name)

The parameters and settings are the same as for Normal Voices. See Page 80 for further details.

GEN Other (General Other)

There are parameters available for Plug-in Board.

■ **Mode**
Select monophonic or polyphonic playback. Select whether the Voice is played back monophonically (single notes only) or polyphonically (multiple simultaneous notes).

❑ **Settings:** mono, poly

■ **Assign**
If you set Key Assign to "single," the doubled playback of the same note is prevented. The synthesizer will terminate a note when the same note is received again. If you select "multi," the synthesizer will consecutively assign each instance of the same received note to a separate channel, making multiple part tone generation possible.

❑ **Settings:** single, multi

Plug-in Common Quick Edit

The parameters here are primarily for Plug-in Voice volume and tone. Many of there can also be adjusted using the Sound Control knobs on the front panel of the CS6x. The following four screens are available.

QED Level (Quick Edit Level)
QED EffectCtrl (Quick Edit Effect)
QED Filter (Quick Edit Filter)
QED EG (Quick Edit Envelope Generator)

QED Level (Quick Edit Level)

The parameters and settings are the same as for Normal Voices. Details are given on Page 81.

QED EffectCtrl (Quick Edit Effect)

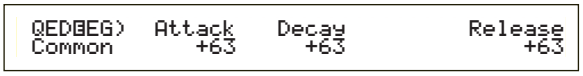
The parameters and settings are the same as for Normal Voices. Details are given on Page 81.

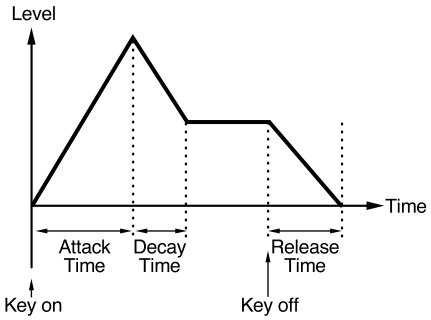
QED Filter (Quick Edit Filter)

The parameters and settings are the same as for Normal Voices. Details are given on Page 82.

QED EG (Quick Edit Envelope Generator)

The EG (Envelope Generator) can be used to control the change in Plug-in Voice volume over time. There are three parameters for this EG, controlling the change in volume from the moment a note is pressed on the keyboard to the moment it is released, or to the point where it has faded to zero.





■ **Attack**
Set the Attack Time (the time taken for the volume to reach its peak after a note is pressed on the keyboard). You can also adjust this parameter using the [ATTACK] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Decay**
Set the Decay Time (the time taken for the volume to change from its peak to a steady level). You can also adjust this parameter using the [DECAY] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Release**
Set the Release Time (the time taken for the volume to fade to zero after the note is released). You can also adjust this parameter using the [RELEASE] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

Plug-in Common Arpeggio

In the following four screens, you can set parameters for the Arpeggiator used by the Plug-in Voice. The parameters are the same as for Normal Voices. Details are given on Page 82.

ARP Type (Arpeggio Type)
ARP Limit (Arpeggio Note Limit)
ARP Mode (Arpeggio Mode)
ARP PlayEF (Arpeggio Play Effect)

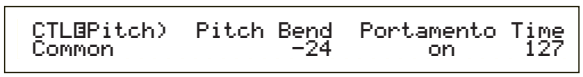
Plug-in Common Controller

You can set Pitch Bend Wheel, Modulation Wheel and other Controller parameters for the Plug-in Voices in the following nine screens.

CTL Pitch (Pitch Bend)
CTL Set1 (Control Set 1)
CTL Set2 (Control Set 2)
CTL MW Control (MW Control Depth)
CTL MW Modulation (MW Modulation Depth)
CTL AT Control (AT Control Depth)
CTL AT Modulation (AT Modulation Depth)
CTL AC Control (AC Control Depth)
CTL AC Modulation (AC Modulation Depth)

CTL Pitch (Pitch Bend)

You can set the Pitch Bend Range and Portamento for the Plug-in Voice here. Portamento creates a smooth transition from the pitch of the first note played to the pitch of the next.



■ **Pitch Bend**
Set the amount (in semitones) by which the pitch of the note is varied when you move the Pitch Bend Wheel up/down. For example, if you set a value of +12, the pitch will change up by up to an octave when you move the wheel up. Conversely, if you set a negative value, the pitch falls when you move the wheel down.

❑ **Settings:** -24 ~ 0 ~ +24

■ **Portamento**
Switch Portamento on or off. You can also set this parameter using the PORTAMENTO [ON/OFF] key on the front panel of the CS6x.

❑ **Settings:** off, on

■ **Time**
Set the Portamento Time, which is the speed of the transition in pitch from the first note to the next. You can also set this parameter using the [PORTAMENTO] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

CTL Set1 (Control Set 1)

CTL Set2 (Control Set 2)

These parameters are the same as for Normal Voices. Details are given on Page 84 (The Elem SW parameter is only available for Normal Voices).

CTL MW Control (MW Control Depth)

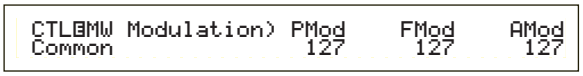
Here, you can set the depth of control the Modulation Wheel has over the filter.

■ **Filter**
Set the depth of control of the Modulation Wheel over the filter cutoff frequency.

❑ **Settings:** -64 ~ 0 ~ +63

CTL MW Modulation (MW Modulation Depth)

Here, you can set the depth of control the Modulation Wheel has over the pitch, filter and amplitude modulation of the Plug-in Voice.



■ **PMod (Pitch Modulation Depth)**
Set the depth of control the Modulation Wheel has over the pitch modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

■ **FMod (Filter Modulation Depth)**
Set the depth of control the Modulation Wheel has over the filter cutoff modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

■ **AMod (Amplitude Modulation Depth)**
Set the depth of control the Modulation Wheel has over the amplitude modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

CTL AT Control (AT Control Depth)

Here, you can set the depth of control keyboard aftertouch has over the pitch and filter of the Plug-in Voice.

■ **Pitch**
Set the depth of control of keyboard aftertouch over the pitch. You can set a value (in semitones) of up to two octaves.

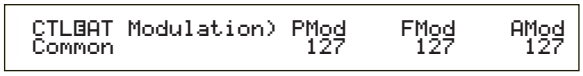
❑ **Settings:** -24 ~ 0 ~ +24

■ **Filter**
Set the depth of control of keyboard aftertouch over the filter cutoff frequency.

❑ **Settings:** -64 ~ 0 ~ +63

CTL AT Modulation (AT Modulation Depth)

Here, you can set the depth of control that keyboard aftertouch has over the pitch, filter and amplitude modulation of the Plug-in Voice.



■ **PMod (Pitch Modulation Depth)**
Set the depth of control that keyboard aftertouch has over the filter pitch modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

■ **FMod (Filter Modulation Depth)**
Set the depth of control that keyboard aftertouch has over the filter cutoff modulation. The larger the setting, the greater the depth of control.

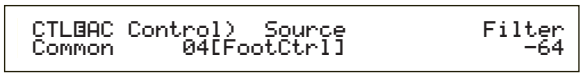
❑ **Settings:** 0 ~ 127

■ **AMod (Amplitude Modulation Depth)**
Set the depth of control that keyboard aftertouch has over the amplitude modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

CTL AC Control (AC Control Depth)

You can set the depth of control the Control Change messages (Assignable Control) have over the filter of the Plug-in Voice.



■ **Source**
Set the MIDI Control Change number used to control the filter.

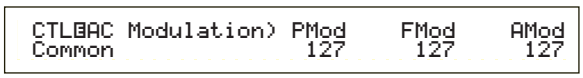
❑ **Settings:** 0 ~ 95

■ **Filter**
Set the depth of the filter cutoff frequency controlled by the Control Change set above.

❑ **Settings:** -64 ~ 0 ~ +63

CTL AC Modulation (AC Modulation Depth)

Here, you can set the depth of control the Control Change messages (Assignable Control) have over the pitch, filter and amplitude of the Plug-in Voice.



■ **PMod (Pitch Modulation Depth)**
Set the depth of control the Control Change messages (selected in the Source parameter) have over the pitch modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

■ **FMod (Filter Modulation Depth)**
Set the depth of control the Control Change messages (selected in the Source parameter) have over the filter cutoff modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

■ **AMod (Amplitude Modulation Depth)**
Set the depth of control the Control Change messages (selected in the Source parameter) have over the amplitude modulation. The larger the setting, the greater the depth of control.

❑ **Settings:** 0 ~ 127

Plug-in Common LFO (Low Frequency Oscillator)

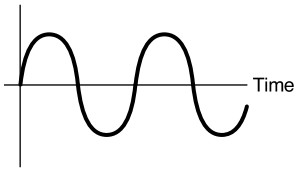
You can set the LFO parameters here. The LFO uses a low-frequency waveform to vary (modulate) the pitch of the sound. The vibrato effect, for example, makes use of the LFO.

LFO Param (LFO Parameter)

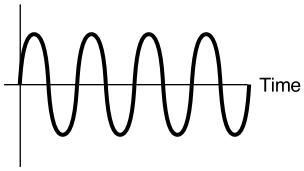
■ **Speed**
Set the speed of the LFO waveform. A positive setting will increase the speed and a negative setting will reduce it.

❑ **Settings:** -64 ~ 0 ~ +63

Speed = Slow



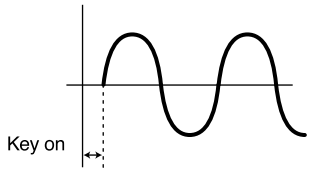
Speed = Fast



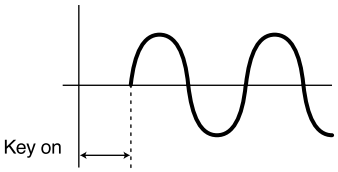
■ **Delay**
Set the delay time between the moment you press a note on the keyboard and the moment the LFO comes into effect. As shown in the illustration, a positive setting will lengthen the delay and a negative setting will shorten it.

❑ **Settings:** -64 ~ 0 ~ +63

Short Delay



Long Delay



■ **PMod (Pitch Modulation Depth)**
Set the amount by which the LFO waveform controls the pitch. A positive setting will increase the amount and a negative value will decrease it.

❑ **Settings:** -64 ~ 0 ~ +63

Plug-in Common Effect

In the following three screens, you can set the parameters for the Insertion and System Effects used by the Plug-in Voice. The parameters are the same as for Normal Voices. The EFF EF1 (Insertion Effect) parameter is the same as the EFF EF1 (Insertion Effect 1) parameter of the Normal Voices. Details are given on Page 88.

EFF EF1 (Insertion Effect)
EFF Rev (Reverb)
EFF Cho (Chorus)

Plug-in Element OSC (Oscillator)

Here, you can set the Element-related parameters for the Plug-in Voice. In the following two screens, you can select the Element's waveform, then it's velocity parameters.

OSC Assign (Oscillator Assign)
OSC Velocity (Oscillator Velocity)

OSC Assign (Oscillator Assign)

You can select the Board Voice that make up the Element in a Plug-in Voice. Use Knob [C] to select the Bank and Knob [1] to select the Board Voice.

■ **Bank**
Select the Board Voice Bank of the Plug-in Voice.

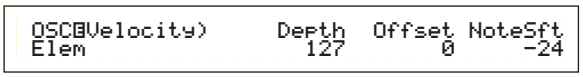
❑ **Settings:** (Depends on the Plug-in Board. Refer to the Owner's Manual for your Plug-in Board.)

■ **Number**
Select the Board Voice Number. The Board Voice Name is displayed to the right of this number.

❑ **Settings:** (Depends on the Plug-in Board. Refer to the Owner's Manual for your Plug-in Board.)

OSC Velocity (Oscillator Velocity)

Here, you can set the velocity and note shift for the Board Voice.



■ **Depth**
Set the velocity sensitivity of the Board Voice. If you set a larger value, the volume increase will be greater the harder you play the keyboard.

❑ **Settings:** 0 ~ 127

■ **Offset**
Set an offset value for the velocity sensitivity of the Board Voice. When you press a note on the keyboard, this offset value is added to the note velocity.

❑ **Settings:** 0 ~ 127

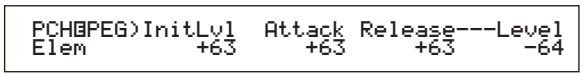
■ **NoteSft (Note Shift)**
Set the amount (in semitones) by which the pitch of the Board Voice is shifted. You can set a value of up to 2 octaves.

❑ **Settings:** -24 ~ 0 ~ +24

Plug-in Element Pitch

You can set the Pitch Envelope Generator parameters for the Board Voice. The Pitch Envelope Generator controls the change in pitch from the moment a note is pressed on the keyboard to the moment it is released.

PCH PEG (Pitch Envelope Generator)



■ **InitLvl (Initial Level)**
Set the Initial Level.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Attack**
Set the Attack Time.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Release**
Set the Release Time.

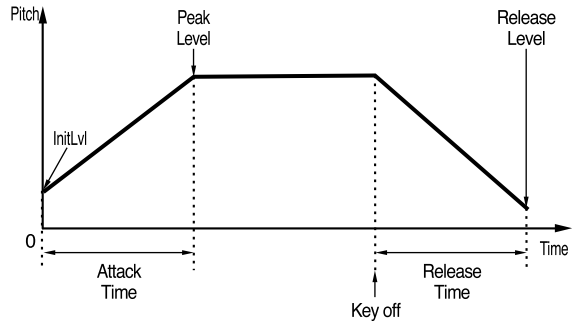
❑ **Settings:** -64 ~ 0 ~ +63

■ **Level**
Set the Release Level.

❑ **Settings:** -64 ~ 0 ~ +63

Pitch Envelope Generator Settings

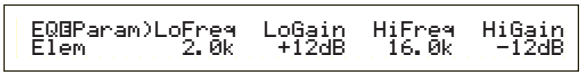
You can set two time (speed) parameters and two level (pitch) parameters controlling the change in pitch from the moment you press a note on the keyboard to the moment you release it. When you press a note on the keyboard, the initial pitch is defined by the InitLvl parameter setting. The pitch then changes from the InitLvl value to the peak pitch within the time set in the Attack parameter. Thereafter, the pitch change is defined by the Release Time/Level settings.

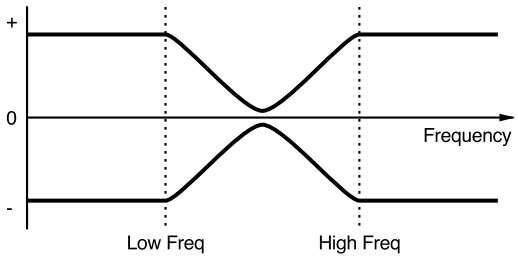


Plug-in Element EQ (Equalizer)

You can set the equalizer settings for the Wave. This is a shelving equalizer with two bands; one for high frequencies and another for low frequencies.

EQ Param (EQ Parameter)





■ **LoFreq (Low Frequency)**
Set the shelving point for the low frequencies. The levels of signals below this frequency will be boosted/attenuated by the amount set in the LoGain parameter.

❑ **Settings:** 32Hz ~ 2.0kHz

■ **LoGain (Low Gain)**
Set the amount by which signals below the LoFreq frequency will be boosted/attenuated.

❑ **Settings:** -64 ~ 0 ~ +63

■ **HiFreq (High Frequency)**
Set the shelving point for the high frequencies. The levels of signals above this frequency will be boosted/attenuated by the amount set in the HiGain parameter.

❑ **Settings:** 500Hz ~ 16.0kHz

■ **HiGain (High Gain)**
Set the amount by which signals above the HiFreq frequency will be boosted/attenuated.

❑ **Settings:** -64 ~ 0 ~ +63

Plug-in Element Native

With a Plug-in Board installed, you have native and unique parameters to set up a Board Voice from the Plug-in Board.

PLG-NATIVE (Plug-in Native)

Native Part Parameters are displayed. Use the [PAGE] knob to switch to the screen for the desired parameter, then use Knob [C] and Knob [2] to enter the settings.

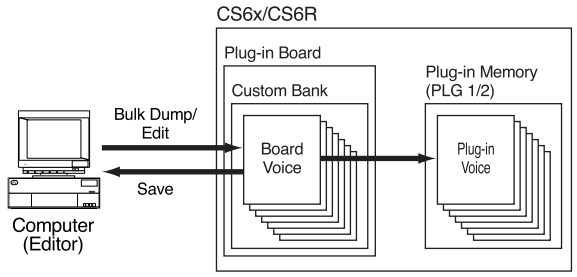
The parameters and number of screens will vary depending on the Plug-in Board. For details about each parameter and its functions, refer to the Owner's Manual or the on-line help that came with your Plug-in Board.

Editing Plug-in Board Voices

Plug-in Voices are based on Board Voices. However, the Board Voices themselves can be edited via computer, using the included editor software. Different editors are available for different Plug-in Boards.

NOTE When using the editor while the synthesizer is in Voice Mode, set the "Part No." in the editor to "1." Also, make sure the synthesizer's Basic Receive channel is the same as that set in the editor's MIDI channel.

Your edits made to a Board Voice will be retained in the Custom Bank until you turn off the instrument. Note that the Custom Bank is a temporary memory so that edits in the Bank will be erased when you turn off the instrument. Therefore, it may be necessary to save Board Voice data using a computer.



NOTE Details about how to use the editor are given in the on-line help.

When bulk-dumping Board Voice data, the edited Board Voices is received in the Custom Bank according to the Bank Select Message (MSB/LSB) unique to each Plug-in Board. Therefore, to play back these Board Voices, you need to select the appropriate Banks in the synthesizer.

1. In Voice Play Mode, select any Voice in a Plug-in Memory (PLG1 or PLG2).
2. The Board Voice you have edited can now be played back if a Custom Bank has been selected at this screen.

NOTE For details about Custom Banks, Bank Select Numbers (MSB/LSB) and Board Voices, refer to the Owner's Manual or the on-line help that came with your Plug-in Board.

NOTE Once you have transmitted the edited Board Voice data to the synthesizer and saved it to Memory Card as a "plugin" file type, you can load the file without having to connect the computer.

If a Board Voice in the Custom Bank has been edited in Voice Edit Mode, you can store it as a Plug-in Voice in Memory Bank A to D of PLG1 or PLG2. Up to 64 can be stored in each Bank.

However, only the Voice Edit parameters can be stored. The edited Board Voice parameters cannot be stored. Therefore, you will lose all Board Voice edits when you switch your synthesizer off.

To avoid this situation, you should save your Board Voice edits to Memory Card and then load the data as a Plug-in Voice.

After loading Board Voice data, if you select Plug-in Voice Memories (PLG1/PLG2) A to D, the stored sound (the edited Plug-in Voice based on the Board Voice) is loaded.

NOTE The "all" setting is not available when saving Board Voice data; it is saved as a "plugin" file type. If the file name is set such that the file loads automatically (Page 172), the Board Voice data can also be loaded up when the synthesizer is switched on.

NOTE It may take a while to save or load the Board Voice data using Memory Card.

NOTE Details about saving/loading data to/from Memory Card are given on Page 173.

NOTE The editor for the PLG150-AN/PF Plug-in Board is a plug-in program for XGworks(lite). You will need to be running Windows and XGworks(lite) in order to use it. XGworks lite is included on the CD-ROM included with this synthesizer.

Voice Job Mode

You can perform various operations (Jobs) in Voice Job Mode. For example, you can "Initialize" Voices (including those currently being edited) or "Recall" previous edits.

When you enter Voice Job Mode, you will first see the Initialize screen. The following four screens are available for each Voice Job.

NOTE Before entering Voice Job Mode and using the Initialize or Recall function, you must select the Voice you wish to operate on (Page 74).

1st screen: VCE Initialize
2nd screen: VCE Edit Recall
3rd screen: VCE Copy
4th screen: VCE Bulk Dump

NOTE Details about how to enter Voice Job Mode are given on Page 22.

Performing a Job

1. In Voice Play Mode, select the Voice Number you wish to perform the Job on.
2. Press the [JOB] key to enter Voice Job Mode.
3. Use the [PAGE] knob and switch to the screen showing the Job you wish to perform.

```
VCE Initialize)
Job      Current Voice
```

4. Use Knobs [B]/[C] and Knobs [1]/[2] to select the parameter you wish to perform the Job on. (Alternatively, use the [DATA] knob and the [DEC/NO] and [INC/YES] keys.)

   NOTE This step is not applicable for Recall and Bulk Dump Jobs.

5. When you press the [ENTER] key, you will be prompted for confirmation.

```
VCE Initialize)
 <<    Are You sure?  [YES]/[NO]   >>
```

6. Press the [INC/YES] key to confirm. The message "Completed." will be displayed when the Job has completed, and you will be returned to the original screen.

   Press the [DEC/NO] key to cancel the Job.

   NOTE For Jobs that take longer to process, you will see the message "Executing..." during processing. If you switch off the power to your synthesizer while this message is displayed, you risk corrupting your data.

7. Press the [VOICE] key to exit Voice Job Mode and return to Voice Play Mode.

VCE Initialize

You can reset (initialize) all parameters of a Voice to their default settings. You can also selectively initialize certain parameters, such as Common settings, settings for each Element/Drum Key, and so on. Note that this does not return the Voice to its original state prior to editing. Instead, it is useful when building a completely new Voice from scratch.

```
VCE Initialize)
Job      Current Voice
```

■ Select type of parameter to Initialize

Use Knob [C], the [DATA] knob or the [DEC/NO] and [INC/YES] keys to select the parameter to be initialized. The parameters available for initialization will vary depending on the type of Voice currently selected (Normal/Drum/Plug-in).

❑ **Settings:**

normal Voice:
Current Voice, Current Common, Current Element 1 ~ 4

Drum Voice:
Current Voice, Current Common (data common to all Drum Keys), Current Key C0 ~ C6 (Drum Key C0 ~ C6)

Plug-in Voice:
Current Voice, Current Common, Current Element

VCE Edit Recall

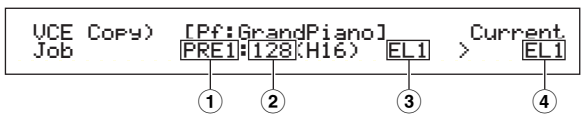
If you are editing a Voice but you do not store it before switching to another Voice, the edits you have made will be cleared. In such a situation, you can use the Recall function to reinstate the edits for the Voice.

```
VCE Edit Recall)
Job
```

VCE Copy

You can copy Common and Element/Drum Key parameter settings from any Voice to the Voice you are editing. This is useful if you are creating a Voice and wish to use some parameter settings from another Voice.

NOTE This function is not used for copying whole Voices from one location to another. It is used for copying parameter settings from an existing Voice to the current Voice you are editing.



■ ① Source Voice Memory

Select the Voice Memory containing the Voice (source) from which you will copy parameter settings.

❑ **Settings:** PRE1/2 (Preset 1/2), INT (Internal Normal), EXT (External Normal), PLG1/2 (Plug-in 1/2), PRE (Preset Drum), INT (Internal Drum), EXT (External Drum)

■ ② Source Voice Number

Select the Voice Number of the source Voice. The Voice Name is shown in the top line of the display.

❑ **Settings:** 001 ~ 128 (for Preset/Internal/External Normal), 1 ~ 64 (for Plug-in 1/2), DR1 ~ DR8 (for Preset Drum), DR1 ~ DR2 (for Internal/External Drum)

■ ③ Source Voice Parameter

Select the parameter of the source Voice. You can copy parameter settings common to all Elements or those used by individual Elements.

❑ **Settings:**
normal Voice:
Common (all Elements), EL1 ~ EL4
Drum Voice:
Common (all Drum Keys), C0 ~ C6
Plug-in Voice:
Common, EL (Element)

NOTE If the parameters of the source Voice (Normal/Drum/Plug-in) differ from those of the Voice you are currently editing (destination), you will only be able to copy Common parameters.

■ ④ Destination Element/Drum Key

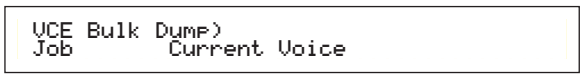
Set the Element/Drum Key of the destination Voice. If the source is a Normal or Drum Voice, you can only choose a destination if the Element/Drum Key has been set.

❑ **Settings:**
normal Voice:
EL1 ~ EL4
Drum Voice:
C0 ~ C6

NOTE If you choose to copy Common parameters from the source, this screen will change to "Common".

VCE Bulk Dump

You can send all the parameter settings for the current Voice to your computer or some other external MIDI device using Bulk Dump.



NOTE You must set the correct MIDI Device Number in order to perform a Bulk Dump. Details are given on Page 166.

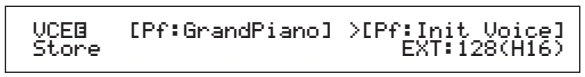
Voice Store

You can store (save) the parameter settings for up to 128 Voices to each of your synthesizer's Memories (INT: Internal) or to its Memory Card (EXT: External). The procedure is as follows.

NOTE Up to 64 plug-in vioces can be stored in Banks A to D of PLG 1/2.

NOTE When you perform this, the settings for the destination Voice will be overwritten. Important data should always be backed up to computer, a separate Memory Card or some other storage device.

❶ Press the [STORE] key after editing a Voice. You will see the Voice Store screen.



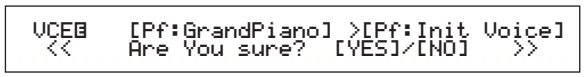
❷ Use Knob [1] to select the destination Voice Memory (INT or EXT).

NOTE This is fixed to PLG 1/2 when storing a Plug-in Voice.

❸ Use Knob [2] to select the destination Voice Number This will set the Voice Memory/Number to which your Voice will be stored.

NOTE You can also use the [DATA] knob or [DEC/NO] and [INC/YES] keys to perform this operation.

❹ When you press the [ENTER] key, you will be prompted for confirmation.



❺ Press the [INC/YES] key to confirm. The message "Executing…" will be displayed while the Job is being processed. When it has completed, you will see the message "Completed." and you will be returned to Voice Play Mode.

NOTE You can press the [DEC/NO] key to cancel the Job. This will return you to the original screen.

NOTE There are two Scenes available for Each Voice. The on/off states of both Scenes will also be stored. Details about Scenes are given on Page 45.

Performance Mode

Performance Play

In Performance Play Mode, multiple Voices (up to four Parts) can be layered to create thick sounds which you can play in real-time or using a sequencer.

In Performance Mode, up to 20 Parts can be combined in a single Performance, including Voices for the 16 Parts plus Phrase Clip, A/D Input and Plug-in 1/2 Parts. Depending on the Performance Edit settings (Page 121), you can assign a Normal Voice or Drum Voice (Drum Kit) to each Part. Multiple Parts can be assigned to the same MIDI channel for real-time playback. Alternatively, you can assign each Part to a different MIDI channel for playback using an external sequencer or the synthesizer's internal sequencer (in Sequence Play Mode). The synthesizer can hold up to 256 Performances, consisting of 128 Internal Performances plus another 64 External Performances on Memory Card.

The displayed screens, the method of selecting Performances and the Multi Part Edit process in Performance Play Mode are explained here.

NOTE Bank and Program keys are not available on the CS6R. Use Knobs [A] to [C], Knob [1]/[2] and the [DATA] knob to select Program Numbers.

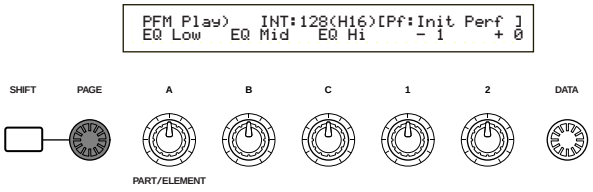
NOTE If a multitimbral Plug-in board is installed, up to 35 Parts can be combined in a single Performance. However, the settings for the Plug-in Parts cannot be stored in memory.

NOTE An overview of Performances is given on Page 39.

Performance Play Mode Display

You will see the following screen when you enter Performance Play Mode. There are seven Performance Play Mode screens, as explained below. Use the [PAGE] knob to switch between screens.

NOTE Details about how to enter Performance Play Mode are given on Page 21.



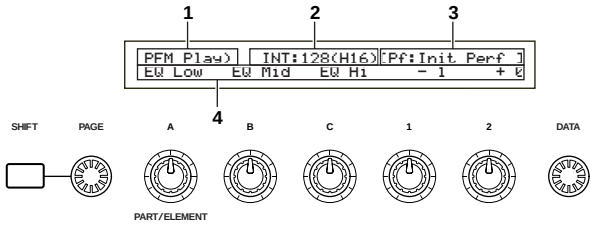
1st screen: PFM Play (Performance Play)
Main Performance screen

2nd screen: PFM Srch (Performance Search)
You can quickly search for a Performance by specifying the Performance Memory and Category.

In the 3rd to 7th screens, you can set the output levels, stereo pan position and other general parameters for each Part (Multi Part Edit). These are useful when using the synthesizer with a sequencer. Details are given on Page 119.

3rd screen: PFM Mlt) Volume (Performance Multi: Volume)
4th screen: PFM Mlt) Pan (Performance Multi: Pan)
5th screen: PFM Mlt) RevSend (Performance Multi: Reverb Send)
6th screen: PFM Mlt) ChoSend (Performance Multi: Chorus Send)
7th screen: PFM Mlt) NoteSft (Performance Multi: Note Shift)

1st Screen: PFM Play (Performance Play)



1. Screen Title

This shows that you are currently in Performance Play Mode.

2. Performance Memory/Number (Bank/Number)

The Memory/Performance Program Number (001 to 128) and Bank ([A] to [H])/Program Number ([1] to [16]) are shown for the selected Performance. For example, "INT: 128(H16)" shows that the Memory is "Internal," the Performance/Program Number is "128," the Bank is "H," and the Bank's Program Number is "16."

Memory/Performance Program Number

Internal Memories are shown as "INT" and External Memories are shown as "EXT." Each Voice within a Memory is assigned a Performance Program Number of 001 to 128.

NOTE Details about Performance Memories are given on Page 29.

Bank/Program Number

Performance Program Numbers 001 to 128 are related to Banks A to H and Program Numbers 1 to 16 (for the Bank) as explained below. For example, you can select a Performance either directly by its Performance Program Number or by using a combination of Bank and Program keys.

Performance Number	Bank	Program Number	Performance Number	Bank	Program Number
001	A	1	065	E	1
002	A	2	066	E	2
003	A	3	067	E	3
004	A	4	068	E	4
005	A	5	069	E	5
006	A	6	070	E	6
007	A	7	071	E	7
008	A	8	072	E	8
009	A	9	073	E	9
010	A	10	074	E	10
011	A	11	075	E	11
012	A	12	076	E	12
013	A	13	077	E	13
014	A	14	078	E	14
015	A	15	079	E	15
016	A	16	080	E	16
017	B	1	081	F	1
018	B	2	082	F	2
019	B	3	083	F	3
020	B	4	084	F	4
021	B	5	085	F	5
022	B	6	086	F	6
023	B	7	087	F	7
024	B	8	088	F	8
025	B	9	089	F	9
026	B	10	090	F	10
027	B	11	091	F	11
028	B	12	092	F	12
029	B	13	093	F	13
030	B	14	094	F	14
031	B	15	095	F	15
032	B	16	096	F	16
033	C	1	097	G	1
034	C	2	098	G	2
035	C	3	099	G	3
036	C	4	100	G	4
037	C	5	101	G	5
038	C	6	102	G	6
039	C	7	103	G	7
040	C	8	104	G	8
041	C	9	105	G	9
042	C	10	106	G	10
043	C	11	107	G	11
044	C	12	108	G	12
045	C	13	109	G	13
046	C	14	110	G	14
047	C	15	111	G	15
048	C	16	112	G	16
049	D	1	113	H	1
050	D	2	114	H	2
051	D	3	115	H	3
052	D	4	116	H	4
053	D	5	117	H	5
054	D	6	118	H	6
055	D	7	119	H	7
056	D	8	120	H	8
057	D	9	121	H	9
058	D	10	122	H	10
059	D	11	123	H	11
060	D	12	124	H	12
061	D	13	125	H	13
062	D	14	126	H	14
063	D	15	127	H	15
064	D	16	128	H	16

3. Performance Category/Name

Performance Category

A two-letter abbreviation of the Performance Category is shown to the left of the Performance Name. This gives you a rough idea of the Performance's sound.

Performance Name

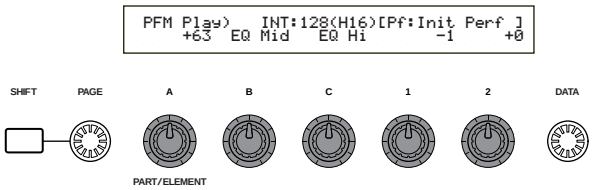
The name of a Performance can consist of up to 10 characters.

4. Knob Parameter Display

This shows the function/Parameter value assigned to each knob ([A] to [C] and [1]/[2]).

Setting/Viewing Knob Parameters

In Performance Play Mode, you can use Knobs [A] to [C] and Knob [1]/[2] to adjust parameters assigned to them. When you use each knob, the value of its assigned parameter is displayed briefly ([knob [A] to [C]).



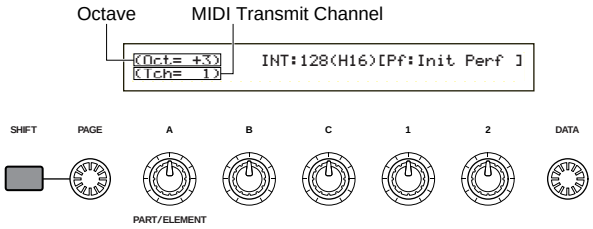
NOTE Details about assigning parameters to Knobs [A] to [C] are given on Page 165. Details about assigning parameters to Knob [1]/[2] are given on Pages 51, 84.

Setting/Viewing Octave and MIDI Transmit Channel Parameters

In Performance Play Mode, the current Octave and MIDI Transmit Channel settings are shown while you hold down the [SHIFT] key. The display varies, depending on whether Master Keyboard Mode is on or off.

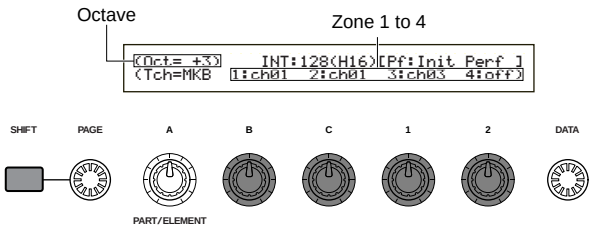
NOTE Details about Master Keyboard Mode are given on Page 123.

Master Keyboard Mode is off



Use Knob [A] while holding down the [SHIFT] key to select the MIDI Transmit Channel (1 to 16).

Master Keyboard Mode is on



Use Knob [B]/[C]/[1]/[2] while holding down the [SHIFT] key to select the MIDI Transmit Channel (1 to 16).

The notes you play in Performance Play Mode will be transmitted on this MIDI channel.

NOTE When the master keyboard mode is turned off, you can use the MIDI Ch screen in Utility Mode to set MIDI transmission channels (Page 166).

Performance Program Selection

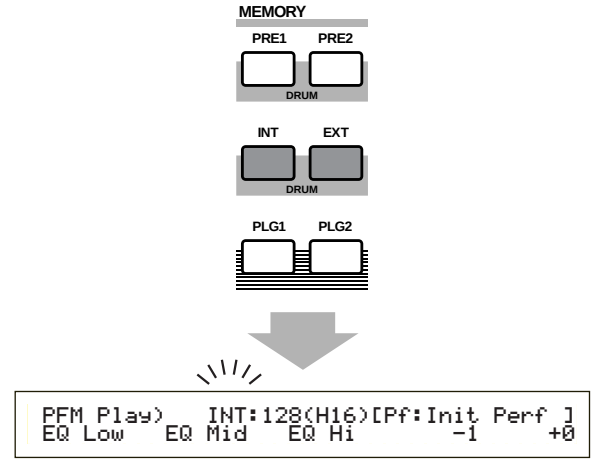
There are four ways in which you can select a Performance.

Using the BANK/PROGRAM keys (CS6x)
Using the [DEC/NO] and [INC/YES] keys
Using the [DATA] knob
Using the Category Search

Using the [INC/YES] and [DEC/NO] keys, the [DATA] knob or the Category Search function is the same as selecting the Voice directly in Voice Play Mode. Refer to Page 75, replacing the word "Voice" with "Performance."

Using the BANK/PROGRAM Keys (CS6x)

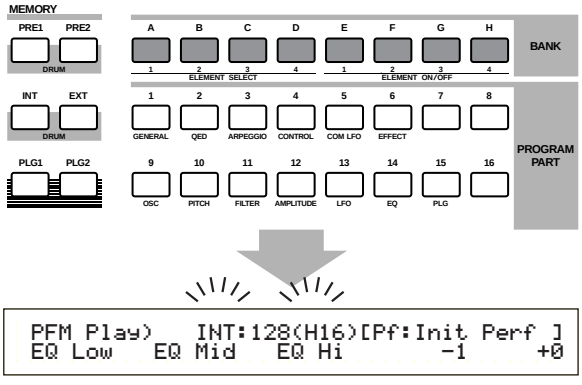
1. Press the MEMORY [INT] or [EXT] key and select the Performance Memory. The selected Performance Memory indicator in the display will blink.



NOTE Details about Performance Memories are given on Page 29.

2. Press a BANK key ([A] to [H]) to select a Bank. The Bank indicator in the display will blink.

NOTE Press Bank keys [A] to [D] when selecting an EXT Performance.

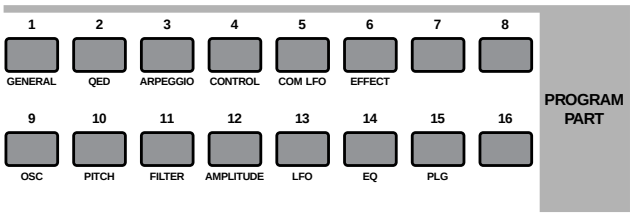


NOTE If you press the [EXIT] key here, the Performance selection process is canceled and the original Performance is reinstated.

NOTE If the Bank has already been selected, this step is not required.

NOTE Details about Banks are given on Page 29.

3. Press a PROGRAM key ([1] to [16]) to select a Program Number.
Performances can be selected by setting the Memory, Bank and Program Number as explained in the three steps given above. The display also shows the selected Performance.

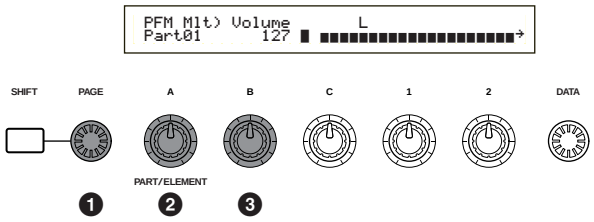


Multi Edit (Volume, Pan, Reverb/Chorus Send, Note Shift)

You can set the output level (volume), stereo pan and other parameters for each Part using the graphic editors on screens 3 to 7. You can, for example, adjust each Part's Volume and Pan parameters in real-time while using the synthesizer as a multitimbral tone generator with a sequencer.

Method of Setting Up

The same procedure applies to screens 3 to 7.



1. Use the [PAGE] knob to select the screen.

2. Use Knob [A] to select the Part. You can choose from PartCL (Phrase Clip Part), PartAD (A/D Input Part), PartP1 (Plug-in 1 Part), PartP2 (Plug-in 2 Part), Part01 to Part16 (Voice Part 1 to 16). Apart from the 7th screen (Note Shift), the Common (Layer Common) parameters are the same for all Layer Parts.

   The parameter settings for each Part are shown as a bar graph, giving you an idea of the overall sound balance.

   You can also use the MEMORY and PART keys on the front panel to select each Part. The keys relate to each Part as follows.

[PRE1/2] key .....Common (Layer Common)
[INT] key .....PartCL (Phrase Clip Part)
[EXT] key .....PartAD (A/D Input Part)
[PLG1] key .....PartP1 (Plug-in 1 Part)
[PLG2] key .....PartP2 (Plug-in 2 Part)
PART keys [1] to [16] (CS6x) ..Part01 to Part16 (Voice Parts 1 to 16)

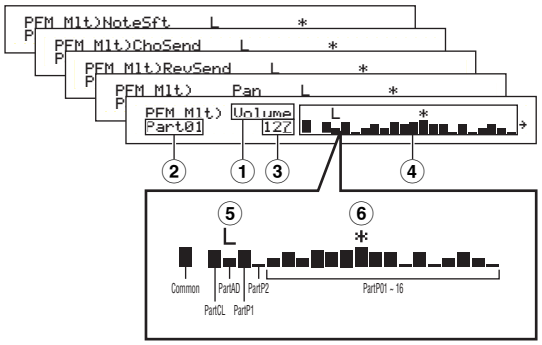
❸Use Knob [B] or the [DATA] knob or the [DEC/NO] and [INC/YES] keys to adjust the parameter settings for each Part.

❹Repeat steps ❷ and ❸ for each of the other Parts.

NOTE To avoid losing the settings, make sure you store the Performance before exiting to another Mode or selecting another Performance. Details about how to store Performances are given on Page 141.

Reading the Displayed Settings

Screens 3 to 7 have the following functions.



①**Parameter:** shows the parameter settings

②**Part:** shows the currently selected Part

③**Value:** shows the setting for the currently selected Part

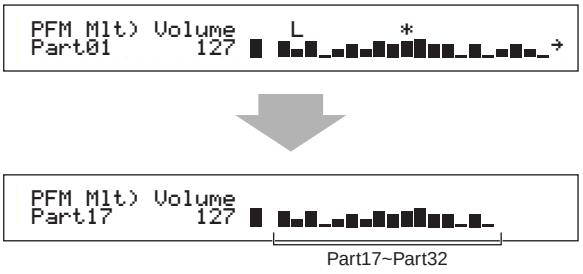
④**Bar graph:** shows the settings for each Part as a bar graph

Common (Layer Common)
PartCL (Phrase Clip Part)
PartAD (A/D Input Part)
PartP1 (Plug-in 1 Part)
PartP2 (Plug-in 2 Part)
Part01 ~ Part16 (Voice Parts 1 ~ 16)

⑤**Layer Switch on/off:** displays a "L" mark above the bar graph for Parts which have their Layer Switch set to "on."

⑥**Mute on/off:** displays a "*" mark above the bar graph for Parts which are muted. Press the [ENTER] key to switch mute on/off for the currently selected Part.

NOTE If a multitimbral Plug-in board is installed in Plug-in Slot 2, PartP2 (Plug-in 2 Part) will no longer be available. However, you will now be able to select Part17 to Part32 (Voice Parts 17 to 32). A "→" mark is displayed to the right of the bar graph, indicating that there are more Parts available. If you select Part17 to Part32, the bar graph shows the settings for those Parts.



■ 3rd Screen: PFM Mlt) Volume (Performance Multi: Volume)

Set the output level (volume) of each Part.

❑**Settings:** 0 ~ 127

■ 4th Screen: PFM Mlt) Pan (Performance Multi: Pan)

Set the stereo pan position for each Part.

❑**Settings:** L63 ~ C ~ R63

■ 5th Screen: PFM Mlt) RevSend (Performance Multi: Reverb Send)

For each Part, set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect.

❑**Settings:** 0 ~ 127

■ 6th Screen: PFM Mlt) ChoSend (Performance Multi: Chorus Send)

For each Part, set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect.

❑**Settings:** 0 ~ 127

■ 7th Screen: PFM Mlt) NoteSft (Performance Multi: Note Shift)

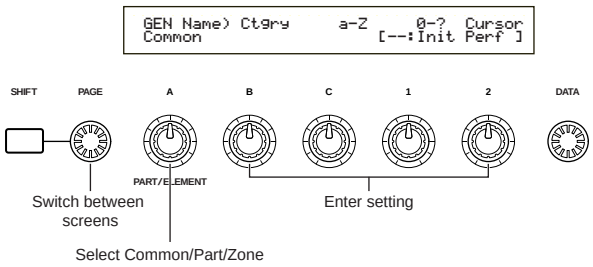
Set the amount (in semitones) by which the pitch of each Part is offset. You can adjust the offset up or down by up to two octaves.

❑**Settings:** -24 ~ 0 ~ +24

Performance Edit

You can set Performance Edit parameters. These can roughly be divided into Common parameters, which apply to all Parts, and Part-specific parameters. Also, there are various zone settings for Master Keyboard Mode (Page 123).

When you enter Performance Edit Mode, you will see the following screen. The actual display (number of screens) will vary depending on the Part selected. Basically, Knob [A] is used to select the type of parameter you wish to edit (Common/Part/Zone), the [PAGE] knob is used to switch between the parameter screens, and Knobs [B], [C], [1] and [2] are used to enter parameter settings. Alternatively, you can use the [DATA] knob, and [DEC/NO] and [INC/YES] keys to enter settings.



You can use Knobs [A] to [C] and Knob [1]/[2] while holding down the [SHIFT] key to move the cursor to each respective parameter. The cursor can also be moved using the [DATA] knob or the [DEC/NO] and [INC/YES] keys while holding down the [SHIFT] key.

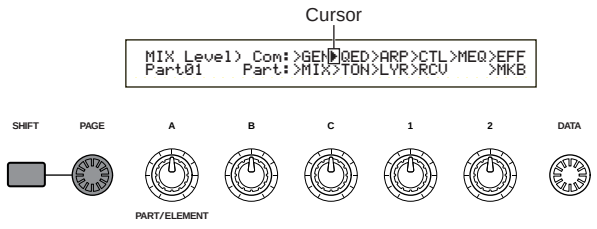
NOTE You must select the Performance you wish to edit before entering Performance Edit Mode (Page 119). All parameter settings for each Performance can be stored.

NOTE If a multitimbral Plug-in Board has been installed, the parameters for its Parts will not be stored.

NOTE Details about how to enter Performance Edit Mode are given on Page 21.

Menu Display

When you use the [PAGE] knob while holding down the [SHIFT] key, the following menu will be displayed. Use the [PAGE] knob to move the cursor between items, then release the [SHIFT] key to jump to the selected item.

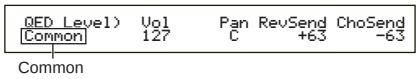


Common/Part/Zone Edit

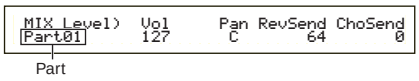
A Performance can consist of 16 Voice Parts, a Phrase Clip Part, an A/D Input Part or a Plug-in Part 1/2 (Page 39). The parameters common to all Parts are known as a Common Edit. The Performance Edit Mode screens can be divided into the Common Edit screen and screens for editing each Part individually. When editing individual Parts, the screens you see will vary depending on the Part selected. If the synthesizer is in Master Keyboard Mode (Pages 8, 67), you will be able to set parameters for each Zone.

In Performance Edit Mode, use Knob [A] to switch between the screens for Common, Part and Zone settings.

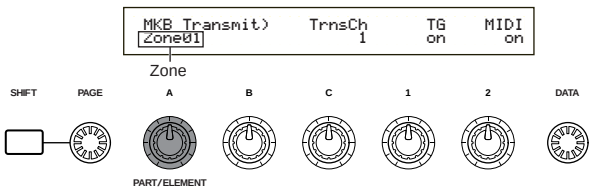
Common settings



Part settings



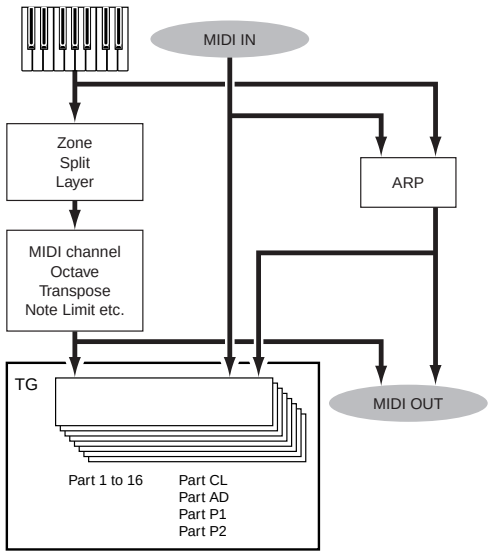
Zone settings



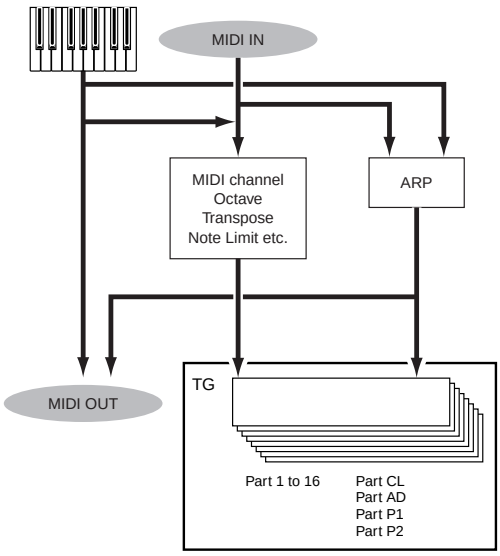
Master Keyboard/Tone Generator Mode (CS6x only)

In Performance Mode, the connection with the CS6x's internal tone generator (the signal flow) can be changed by pressing the [MASTER KEYBOARD] key on the front panel. If the [MASTER KEYBOARD] key LED is on, the CS6x enters Master Keyboard Mode and becomes useful for controlling external tone generators. If the LED is off, the CS6x exits Master Keyboard Mode and becomes useful for controlling its internal Parts from the internal tone generator. The signal flow for each Mode is as follows.

Master Keyboard Mode: [MASTER KEYBOARD] key LED on

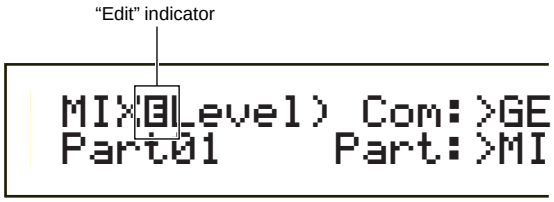


Tone Generator Mode: [MASTER KEYBOARD] key LED off



The E (Edit) Indicator

If you alter any parameters in Performance Edit Mode, the E indicator will be displayed in the top left of the screen. This gives a quick indication that the current Performance has been modified but not yet stored.



NOTE Even if you exit to Performance Play Mode, the edited settings for the current Performance will not be lost so long as you do not select another Performance.

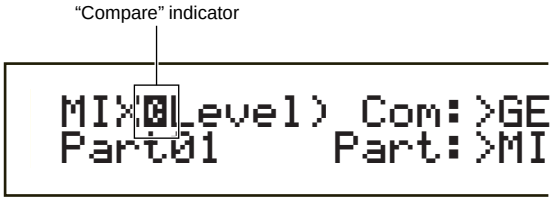
NOTE The E indicator will also be displayed in Performance Play Mode.

NOTE The E indicator will also be displayed in Voice Play Mode if any Sound Control knobs or Assignable knobs are used.

The "Compare" Function

Use this to listen to the difference between the Performance with your edited settings and the same Performance prior to editing.

1. Press the [EDIT/COMPARE] key while in Performance Edit Mode. The E indicator at the top left of the screen will change to the C indicator and the [EDIT/COMPARE] key LED will blink. The Performance settings prior to editing will temporarily be reinstated for comparison purposes.



NOTE Editing will not be possible while the "Compare" function is enabled.

2. Press the [EDIT] key again to disable the "Compare" function and restore the settings for your edited Performance.

Performance Store

The edited settings for the current Performance will be lost if you exit to Performance Play Mode and then select another Performance or Mode. To avoid losing important data, you should always use Performance Store to store your edited Performances after exiting Performance Edit Mode. Details about the Performance Store procedure are given on Page 141.

NOTE When creating a new Performance from scratch, it is useful, prior to editing, to clear the settings for the current Performance using the Initialize Performance function in Performance Job Mode (Page 140).

Common (Settings for all Parts)

Here we explain how to edit common settings for all Parts in a Performance. There are six Menus available, each of which consists of multiple screens.

- Common General
- Common Quick Edit
- Common Arpeggio
- Common Controller
- Common Master EQ
- Common Effect

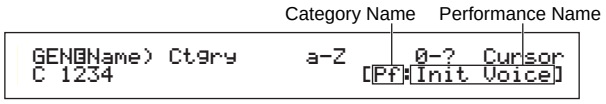
Common General

You can set the Performance Name, MIDI channel and other general parameters in the Common Edit screens. The following three screens are available for general settings.

GEN Name (General Name)
GEN MIDI (General MIDI)
GEN M.Kbd (General Master Keyboard)

GEN Name (General Name)

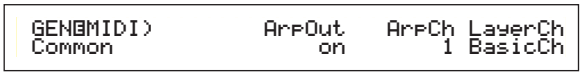
You can set a Performance Name consisting of up to 10 characters (alphabetic or numeric) and/or symbols. You can also select the Category Name to the left of the Performance Name.



NOTE The method of setting the Performance Name is the same as for the Voice Name. Details are given on Page 80.

GEN MIDI (General MIDI)

You can set the MIDI In/Out channel parameters for the Performance.



■ ArpOut (Arpeggio Out)

Switch the Arpeggiator phrase MIDI output on or off.

❑ **Settings:** off, on

■ ArpCh (Arpeggio Channel)

Set the Arpeggiator's MIDI Channel. The arpeggio will play to Parts and Voices set to this MIDI Channel. If you choose Kbdch (Keyboard Channel), the Arpeggiator will use the MIDI Transmit Channel set in Utility Mode (Page 166).

❑ **Settings:** 1 ~ 16, KbdCh (Keyboard Channel)

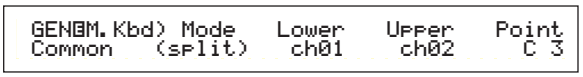
■ LayerCh (Layer Channel)

Set the MIDI Channel of the Layer Part. All Layer Parts (up to four) will use the same MIDI Channel set here. If you choose BasicCh (Basic Receive Channel), all Layer Parts will use the Basic Receive Channel set in Utility Mode (Page 166).

❑ **Settings:** 1 ~ 16, BasicCh (Basic Receive Channel)

GEN M.Kbd (General Master Keyboard)

You can set keyboard splits and layers when using a Performance in Master Keyboard Mode.



■ Mode

Set the keyboard Mode. The following three Modes are available. If the [MASTER KEYBOARD] key LED on the front panel is off, these Modes are not available and brackets are shown in the display.

❑ **Settings:** split, 4zone, layer

split:
Splits the keyboard into a left-hand (lower) section and a right-hand (upper) section, assigning a different MIDI channel and Part to each section.

4zone:
Splits the keyboard into a maximum of four zones, assigning a different MIDI channel and Part to each zone. Parameters can be set separately for each zone (Page 137) when you press the [ENTER] key.

layer:
Layers up to two Zone (Part) over the keyboard. This is useful for creating rich and thick sounds.

■ Lower

When the Mode (see above) has been set to "split," this sets the MIDI channel assigned to notes at and below the split point. The Part or Voice set to this MIDI channel will be played when you press notes at and below the split point. When the Mode is set to "layer," the MIDI channel for one layered Zone (Part) is set here.

❑ **Settings:** ch01 ~ ch16

■ Upper

When the Mode (see above) has been set to "split," this sets the MIDI channel assigned to notes above the split point. The Part or Voice set to this MIDI channel will be played when you press notes above the split point. When the Mode is set to "layer," the MIDI channel for the other layered Zone (Part) is set here.

❑ **Settings:** ch01 ~ ch16

NOTE You can also quickly set the Upper/Lower MIDI channels using the PART keys [1] to [16]. Press and hold one PART key, then press another. The number of the first key is set as the Upper MIDI channel while the number of the second key is set as the Lower MIDI channel.

■ Point

When the Mode (see earlier) has been set to "split," this sets the split point. The actual note of the split point will be assigned to the upper section.

NOTE You can also select the split point by pressing the note while holding down the [SHIFT] key.

❑ **Settings:** C-2 ~ G8

Master Keyboard settings (for split/layer)

	Split				Layer			
Prameter Name	**Zone1**	**Zone2**	**Zone3**	**Zone4**	**Zone1**	**Zone2**	**Zone3**	**Zone4**
TrnsCh	ch	ch+1	ch	ch	ch	ch+1	ch	ch
TG	on	on	off	off	on	on	off	off
MIDI	on	on	off	off	on	on	off	off
Octave	+0	+0	+0	+0	+0	+0	+0	+0
Transpose	+0	+0	+0	+0	+0	+0	+0	+0
Note Limit Low	C-2	p	C-2	C-2	C-2	C-2	C-2	C-2
Note Limit High	p	G8	G8	G8	G8	G8	G8	G8
Transmit Switch PB	on	on	on	on	on	on	on	on
Transmit Switch MW	on	on	on	on	on	on	on	on
Transmit Switch KnobA-C	on	on	on	on	on	on	on	on
Transmit Switch Knob1/2	on	on	on	on	on	on	on	on
Transmit Switch RB	on	on	on	on	on	on	on	on
Transmit Switch FC	on	on	on	on	on	on	on	on
Transmit Switch BC	on	on	on	on	on	on	on	on
Transmit Switch AT	on	on	on	on	on	on	on	on
Transmit Switch FS	on	on	on	on	on	on	on	on
Transmit Switch Sus	on	on	on	on	on	on	on	on
Transmit Switch Vol/FV	on	on	on	on	on	on	on	on
Transmit Switch Pan	on	on	on	on	on	on	on	on
Transmit Switch Bank Select	off	off	off	off	off	off	off	off
Transmit Switch Program Change	off	off	off	off	off	off	off	off
Transmit Preset Volume	100	100	100	100	100	100	100	100
Transmit Preset Pan	C	C	C	C	C	C	C	C
Transmit Preset Bank MSB	0	0	0	0	0	0	0	0
Transmit Preset Bank LSB	0	0	0	0	0	0	0	0
Transmit Preset PC	0	0	0	0	0	0	0	0
CS Control Number Assign	7	7	7	7	7	7	7	7

ch: Keyboard transmit channel
p: split point
Details about each parameter are given on page 137.

NOTE For more information about Master Keyboard Mode, refer to page 67.

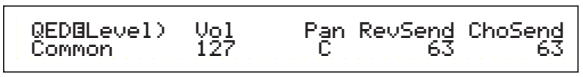
Common Quick Edit

You can set various parameters governing the sonic properties of the Layer Part, and many can be edited using the Sound Control knobs on the front panel of the CS6x. The following four screens are only available when the Layer switch (Page 133) for each Part is set to "on."

QED Level (Quick Edit Level)
QED EF (Quick Edit Effect)
QED Filter (Quick Edit Filter)
QED EG (Quick Edit Envelope Generator)

QED Level (Quick Edit Level)

You can set output level and pan parameters for each Layer Part. The settings are also available in the Part Edit screens.



■ Vol (Volume)

Set the output level of the Layer Part.

❑ **Settings:** 0 ~ 127

■ Pan

Set the stereo pan position of the Layer Part. You can also adjust this parameter using the [PAN] knob on the front panel of the CS6x.

❑ **Settings:** L63 (Left) ~ C (Center) ~ R63(Right)

■ RevSend (Reverb Send)

Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect. You can also adjust this parameter using the [REVERB] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

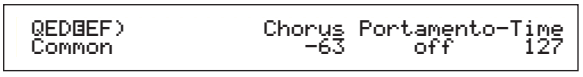
■ ChoSend (Chorus Send)

Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect. You can also adjust this parameter using the [CHORUS] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

QED EF (Quick Edit Effect)

You can set the amount of Chorus applied to the Layer Part, as well as Portamento settings.



■ Chorus

Set the Return level of the Chorus effect as an offset value.

❑ **Settings:** -64 ~ 0 ~ +63

■ Portamento

Switch Portamento on or off. You can also set this using the PORTAMENTO [ON/OFF] key on the front panel of the CS6x.

❑ **Settings:** off, on

■ **Time**
Set the pitch transition time. Higher values mean longer transition times. You can also set this using the PORTAMENTO knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

QED Filter (Quick Edit Filter)

These parameters control filters which govern the tonal quality of the Voice. If you are using LPF (Low Pass Filter) and HPF (High Pass Filter) combined together, the parameters in the QED Filter screen only affects LPF.

■ **Cutoff**
Raise or lower the Cutoff frequency for each Voice of a Layer Part. You can also adjust this parameter using the [CUTOFF] knob on the front panel of the CS6x.

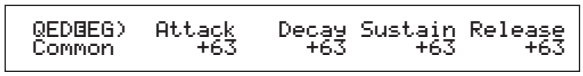
❑ **Settings:** -64 ~ 0 ~ +63

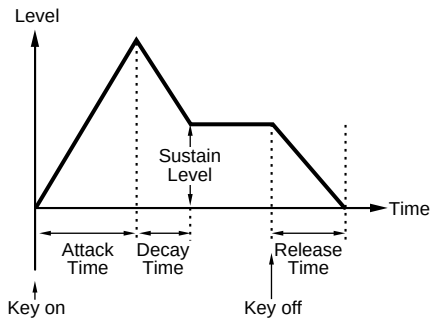
■ **Reso (Resonance)**
Set the amount of Resonance (harmonic emphasis) applied to the signal at the Cutoff frequency. You can also adjust this parameter using the [RESONANCE] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

QED EG (Quick Edit Envelope Generator)

The EG (Envelope Generator) controls the transition in output level over time for each Voice in a Layer Part. There are four parameters governing the transition in output level from the moment a note is pressed on the keyboard to the moment it is released or the point at which the output level has faded to zero. These Layer Part settings make use the each of the Part Edit settings.





■ **Attack**
Set the transition time from the moment a key on the keyboard is pressed to the point at which the output level of the Layer Part reaches its peak. You can also adjust this parameter using the [ATTACK] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Decay**
Set the transition time from the point at which the output level of the Layer Part reaches its peak to the point at which it levels off. You can also adjust this parameter using the [DECAY] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Sustain**
Set the output level of the Layer Part maintained while the key on the keyboard is being held down. You can also adjust this parameter using the [SUSTAIN] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Release**
Set the transition time from the point at which the key on the keyboard is released to the point at which the output level of the Layer Part reaches zero. You can also adjust this parameter using the [RELEASE] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

Common Arpeggio

The following four screens govern the behavior of the Arpeggiator. The parameters are the same as those used in Voice Edit Mode. Details are given on Page 82.

NOTE To use the Arpeggiator in Performance Mode, the Arpeggio and Layer Switches (Page 133) must be set to "on."

ARP Type (Arpeggio Type)
ARP Limit (Arpeggio Note Limit)
ARP Mode (Arpeggio Mode)
ARP PlayEF (Arpeggio Play Effect)

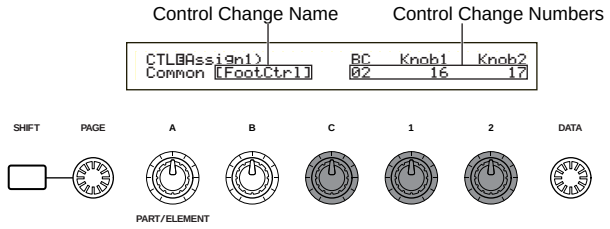
Common Controller

You can assign MIDI Control Change Numbers to the controls and front panel knobs. For example, Knob [1]/[2] can be set to control the amount of effect applied to a sound and the Foot Controller can be set to control modulation. You can set different Control Set assignments for each Performance.
The following two Control Set screens are available.

CTL Assign1 (Controller Assign 1)
CTL Assign2 (Controller Assign 2)

CTL Assign1(Controller Assign 1)

Use Knobs [C], [1] and [2] to assign Control Numbers to the Breath Controller, Knob [1] and Knob [2], respectively. The selected function is shown on the left of the display.



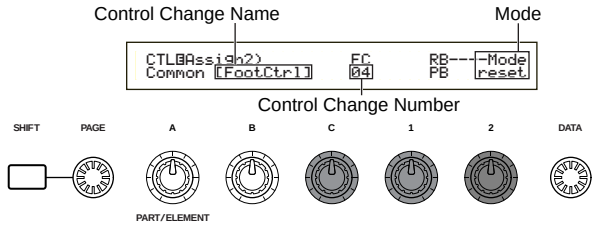
■ **BC (Breath Controller)**
Set Control Change Number assigned to the Breath Controller. The Breath Controller is connected to the BREATH jack (Page 18).

❑ **Settings:** Details are given in the separate Control List.

■ **Knob1/2**
Set Control Change Numbers assigned to Knobs [1] and [2] on the front panel.

CTL Assign2 (Controller Assign 2)

Use Knobs [C] and [1] to assign Control Change Numbers to the Foot Controller and Ribbon Controller, respectively. The selected function is shown on the left of the display. Use Knob [2] to select the Ribbon Controller Mode.



■ **FC (Foot Controller)**
Assign a Controller Change Number to the Foot Controller. The Foot Controller is connected to the FOOT CONTROLLER jack on the rear panel (Page 18).

❑ **Settings:** Details are given in the separate Control List.

■ **RB (Ribbon Controller)**
Assign a Control Change Number to the Ribbon Controller on the front panel. The Ribbon Controller's behavior depends on the Mode parameter setting.

❑ **Settings:** Details are given in the separate Control List.

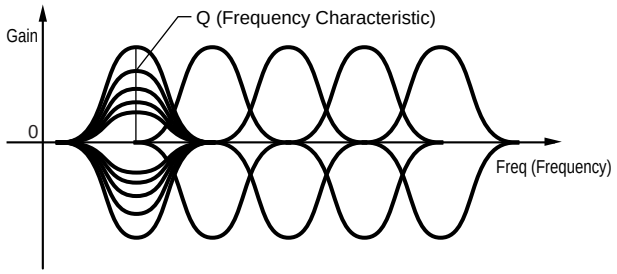
■ **Mode**
Set the behavior of the Ribbon Controller. If you select "hold," the parameter controlled by the Ribbon Controller will hold its value even after you release it. If you select "reset," the value returns to its default setting at the center of the Ribbon Controller strip.

❑ **Settings:** hold, reset

Common EQ (Equalizer)

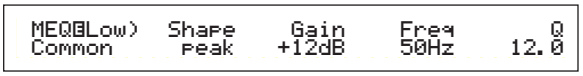
You can assign any of five different Equalizer bands to the entire Performance. The following five screens are available.

EQ Low
EQ LowMid (Low-Middle Range)
EQ Mid (Middle Range)
EQ HighMid (High-Middle Range)
EQ High



EQ Low

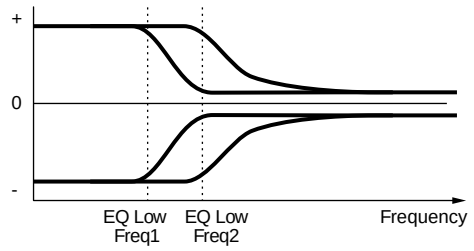
This Equalizer covers low frequencies. You can adjust the signal level at the specified frequency. You can also select different Equalizer types (Shapes).



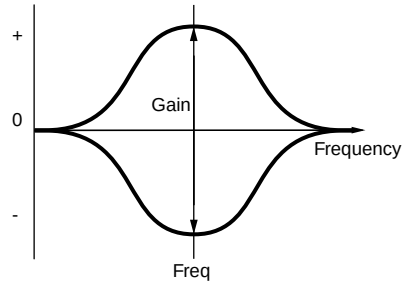
■ **Shape**
Select either a Shelving or Peaking equalizer. The Peaking type attenuates/boosts the signal at the specified Frequency setting, whereas the Shelving type attenuates/boosts the signal at frequencies above or below the specified Frequency setting.

❑ **Settings:** shelv (Shelving), peak (Peaking)

shelv (Shelving)



peak (Peaking)



■ **Gain**
Set the Gain. This attenuates or boosts frequencies around the Frequency setting.

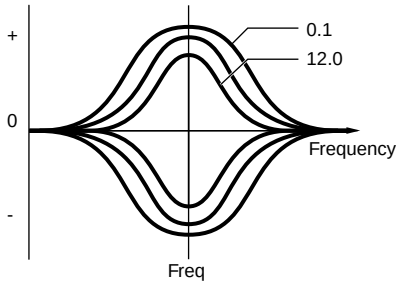
❑ **Settings:** -12dB ~ 0dB ~ +12dB

■ **Freq (Frequency)**
Set the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

❑ **Settings:** 32Hz ~ 2.0kHz

■ **Q (Frequency Characteristic)**
This varies the signal level at the Frequency setting to create various frequency curve characteristics.

❑ **Settings:** 0.1 ~ 12.0



EQ LowMid (Low-Middle Range)

EQ Mid (Middle Range)

EQ HighMid (High-Middle Range)

These Equalizers cover low-to-middle, middle and high-to-middle frequency ranges. They can be used to adjust the signal level around the specified frequency.

LowMid

MEQ@LowMid)	Gain	Freq	Q
Common	+12dB	100Hz	12.0

Mid

MEQ@Mid)	Gain	Freq	Q
Common	+12dB	100Hz	12.0

HighMid

MEQ@HighMid)	Gain	Freq	Q
Common	+12dB	100Hz	12.0

■ **Gain**
Set the Gain. This attenuates or boosts frequencies around the Frequency setting.

❑ **Settings:** -12dB ~ 0dB ~ +12dB

■ **Freq (Frequency)**
Set the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

❑ **Settings:** 100Hz ~ 10.0kHz

■ **Q (Frequency Characteristic)**
This varies the signal level at the Frequency setting to create various frequency curve characteristics.

❑ **Settings:** 0.1 ~ 12.0

EQ High

This Equalizer covers high frequencies. You can adjust the signal level at the specified frequency. You can also select different Equalizer types (Shapes).

MEQ@High)	Shape	Gain	Freq	Q
Common	peak	+12dB	0.5kHz	12.0

■ **Shape**
Select either a Shelving or Peaking equalizer. The Peaking type attenuates/boosts the signal at the specified Frequency setting, whereas the Shelving type attenuates/boosts the signal at frequencies above or below the specified Frequency setting.

❑ **Settings:** shelv (Shelving), peak (Peaking)

■ **Gain**
Set the Gain. This attenuates or boosts frequencies around the Frequency setting.

❑ **Settings:** -12dB ~ 0dB ~ +12dB

■ **Freq (Frequency)**
Set the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

❑ **Settings:** 500Hz ~ 16.0kHz

■ **Q (Frequency Characteristic)**
This varies the signal level at the Frequency setting to create various frequency curve characteristics.

❑ **Settings:** 0.1 ~ 12.0

Common Effect

You can set two types of Insertion Effects, plus two System Effects (Reverb and Chorus). The following three screens are available.

EFF Part
EFF Rev (Reverb)
EFF Cho (Chorus)

EFF Part

EFF@Part)	---- InsEF ----		PLG-EF
Common	part16	partP1	part10

■ InsEF (Insertion Effect)

Assign a Part to an Insertion Effect. Select "off" if you do not wish to assign the Part to an Insertion Effect. Furthermore, if Plug-in Boards have been installed, they will also be selectable as Plug-in Parts 1 and 2.

❑ **Settings:**

normal Part:
Part01 ~ Part16, PartAD (A/D Input Part), PartCL (Phrase Clip Part), off

Plug-in Part (if installed):
PartP1 (Plug-in Part 1), PartP2 (Plug-in Part 2), off

■ PLG-EF (Plug-in Effect)

Assign a Part to the Plug-in Effect. Select "off" if you do not wish to assign the Part to a Plug-in Effect. These parameters are only available if an Insertion Effect Plug-in board has been installed.

❑ **Settings:**

normal Part:
Part01 ~ Part16, PartAD (A/D Input Part), PartCL (Phrase Clip Part), off

EFF Rev (Reverb)

You can select the Reverb Effect Type and set its parameters by pressing the [ENTER] key.

```
EFF▣Rev) Type                Return [ENTER]
Common   Basement              127 to Edit
```

■ Type (Reverb Effect Type)

Set the Reverb Effect Type.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

■ Return

Set the Return level of the Reverb Effect.

❑ **Settings:** 0 ~ 127

EFF Cho (Chorus)

You can select the Chorus Effect Type and set its parameters by pressing the [ENTER] key.

```
EFF▣Cho) Type      toRev  Return [ENTER]
Common   Chorus1     127     127 to Edit
```

■ Type (Chorus Effect Type)

Set the Chorus Effect Type.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

■ toRev (To Reverb)

Set the Send level of the signal sent from the Chorus Effect to the Reverb Effect.

❑ **Settings:** 0 ~ 127

■ Return

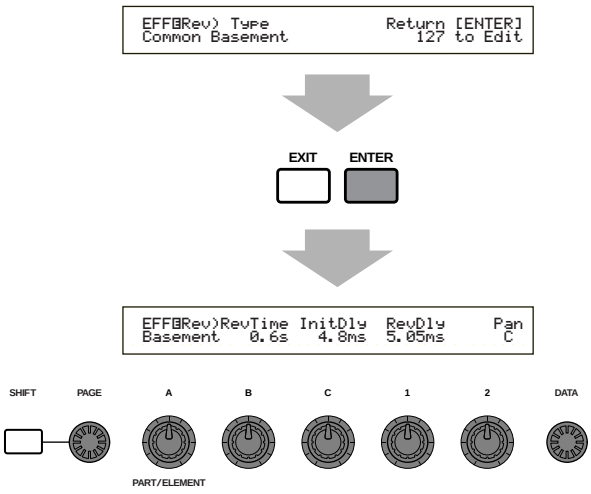
Set the Return level of the Chorus Effect.

❑ **Settings:** 0 ~ 127

NOTE If an Insertion Effect Plug-in Board has been installed, you will see the EFF Plg (Plug-in) screen following the EFF Cho (Chorus) screen.

Effect Parameter Settings

The EFF Rev and EFF Cho parameter screens are available when you select the Effect and press the [ENTER] key. If an Insertion Effect Plug-in Board has been installed, you can enter the parameters for the Plug-in Effect at the EFF Plg (Plug-in) screen. Use the [PAGE] knob to switch between screens, and use the other knobs and the [INC/YES] and [DEC/NO] keys to set each parameter.
When you press the [EXIT] key, you will be returned to the Effect Type selection screen.



NOTE The number of Parameters and the contents of each screen will vary depending on the selected Effect Type. Details are given in the Effect Types list of the separate Data List.

Part (Settings for each Part)

You can edit each Part in a Performance. Use Knob [A] to select the Part, then set its parameters. The following six screens are available, though their contents will vary according to the Part selected.

- Part Mixer
- Part Tone
- Part Layer
- Part Receive switch
- Part Controller
- Part Insertion Effect

Part Mixer

You can set various Voice output parameters for each Part. The following two screens are available.

MIX Vce (Mix Voice)
MIX Level

NOTE The MIX Vce (Mix Voice) screen will change to the Mix Kit or Mix Template screen, respectively, if PartCL (Phrase Clip Part) or PartAD (A/D Input Part) has been selected.

MIX Vce/Kit/Template (Mix Voice/Kit/Template)

You can assign a Voice/Kit/Template to each Part. Use Knob [A] to select the Part, then set its Voice/Kit/Template parameters. The display will vary as follows according to the Part selected.

• If Part01 to Part16 has been selected

You can use the same method as the Category Search (Page 77) to set the Voice.

```
MIX▣Vce) Memory  Number  Ctgry   Search
Part01     PRE1:128(H16)[Pf:GrandPiano]
```

■ Memory (Voice Memory)

❑ **Settings:**
PRE1 (Preset 1), PRE2 (Preset 2), INT (Internal Normal), EXT (External Normal), PRE (Preset Drum), INT (Internal Drum), EXT (External Drum)

■ Number (Program Number)

❑ **Settings:**
1 ~ 128 (for Normal Voices), DR1 ~ DR8 (for Preset Drum), DR1 ~ DR2 (for Internal/External Drum)

NOTE Details about Categories are given in the Category List on Page 80.

• If PartP1/PartP2 (Plug-in 1/2) has been selected

Set the Voice for the Plug-in 1/2 Part. This screen is only displayed if a Plug-in Board has been installed.

Use Knob [B] to select PLG1/2INT (internal memory) and the MSB/LSB (Plug-in Board's Bank), and use Knob [C] to select the Program Number.

```
MIX▣Vce)   Bank  Number  Ctgry   Search
PartP1 NORM/001:128(H16)[Pf:GrandPiano]
```

■ Bank

❑ **Settings:**
PartP1/P2 (Plug-in 1/2): PLG1/2 INT (Plug-in 1/2 Internal), MSB/LSB (Plug-in Bank)

NOTE For details about Plug-in Banks (Bank Select MSB/LSB), refer to the Owner's Manual that came with your Plug-in Board.

■ Number (Program Number)

❑ **Settings:**
PLG1/2 INT (Plug-in 1/2 Internal): 1 ~ 64
MSB/LSB (Plug-in Bank): 1 ~ 128

NOTE There may be a delay when changing programs for Plug-in Parts (since voice data and default settings need to be sent). To change Voices for Plug-in Parts in a song, you should insert the Program Changes in the less data-intensive areas of the song. When selecting a Plug-in Board Voice, you should use the Program Number of the Parameter Change (multi-part). Details are given in the Owner's Manual that comes with the Plug-in Board.

NOTE In Performance Mode, the Part assignments for Plug-in Boards are fixed at "16" for PLG1 and "15" for PLG2.

NOTE For details about Plug-in Voices, refer to the Owner's Manual that came with your Plug-in Board.

• If Part17 to Part32 has been selected

You can set Voices for Parts 17 to 32 if you have a multitimbral Plug-in board installed. Use Knob [B] to select the Voice Bank and Knob [C] to select the Program Number.

```
MIX▣Vce)   Bank  Number
Part17 NORM/001:001(A01)[Pf:GrandPno]
```

■ Bank/Number (Bank/Program Number)

❑ **Settings:** Refer to the Owner's Manual that came with the Plug-in board.

NOTE This setting is only held temporarily and cannot be stored with the Performance.

• If PartCL (Phrase Clip Part) has been selected

Select the Phrase Clip Kit used for the Phrase Clip Part.

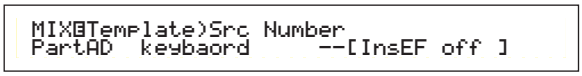
```
MIX▣Kit)          Number
PartCL          001(A01)[Dr:Clip Kit]
```

■ Number (Kit Number)

❑ **Settings:** 1 ~ 4

• If PartAD (A/D Input Part) has been selected

An audio source connected to the A/D INPUT jack can be used as a Part. There are 13 different templates for Effect Type and Gain settings. Select the A/D Input Part source and the template.



■ Src (Source)

Select the source connected to the A/D INPUT jack.

❑ **Settings:** mic (microphone), guitar, keyboard, audio

■ Number (Template Number)

Select the Template Number. You can choose from 13 templates for each source.

❑ **Settings:** 0 ~ 12

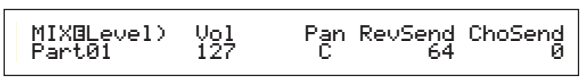
Number / Src		0	1	2	3	4	5	6
MIC	PresetName InputGain VariType	Off mic -	Mic mic -	Reverb mic -	Chorus mic -	Cho+Rev mic -	Karaoke1 mic Karaoke1	Karaoke2 mic Karaoke2
GUITAR	PresetName InputGain VariType	Off mic -	Guitar mic -	Reverb mic -	Chorus mic -	Cho+Rev mic -	Tube mic AmpSim.	Stack mic AmpSim.
KEYBOARD	PresetName InputGain VariType	Off line -	Keyboard line -	Reverb line -	Chorus line -	Cho+Rev line -	PhaserEP line Phaser1	PanEP line AutoPan
AUDIO	PresetName InputGain VariType	Off line -	Audio line -	Reverb line -	Chorus line -	Cho+Rev line -	Audio line -	Audio line -

Number / Src		7	8	9	10	11	12
MIC	PresetName InputGain VariType	Karaoke3 mic Karaoke3	Echo mic Echo	Vocal mic Stage1	Studio mic Exciter	OctUp mic PitChange1	OctDown mic PitChange1
GUITAR	PresetName InputGain VariType	FlangGtr mic Flanger1	CleanGtr mic Celeste3	FuncGtr mic TouchWah2	Tremolo mic Tremolo	Phaser mic Phaser1	5thGuitar mic PitChange1
KEYBOARD	PresetName InputGain VariType	WahClavi line TouchWah1	RotaryOrg line RotarySp.	SynthStr line Symphonic	SynthPad line Flanger2	SynthLead line DelayLCR	SFX line PitChange1
AUDIO	PresetName InputGain VariType	Audio line -	Audio line -	Audio line -	Audio line -	Audio line -	Audio line -

NOTE If the InsEF parameter of the EFF Part screen is set to something other than PartAD, "InsEF Off" will be displayed and this parameter will not be available.

MIX Level

You can set output level, pan, effect send and other parameters for each Part. This is useful when setting up the levels of each Part in a mix.



■ Vol (Volume)

Set the output level of the Part.

❑ **Settings:** 0 ~ 127

■ Pan

Set the stereo pan position of the Part.

❑ **Settings:** L63 (Left) ~ C (Center) ~ R63 (Right)

■ RevSend (Reverb Send)

Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect.

❑ **Settings:** 0 ~ 127

■ ChoSend (Chorus Send)

Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect.

❑ **Settings:** 0 ~ 127

Part Tone

You can set Filter, Envelope Generator and other parameters controlling the tonal characteristics of each Part. The following four screens are available.

TON Filter (Tone Filter)
TON EG (Tone Envelope Generator)
TON Portamento (Tone Portamento)
TON Other (Tone Other)

TON Filter (Tone Filter)

You can use filters to adjust the tone of each part. If the filter is an LPF and HPF combination, the Cutoff parameter applies to the LPF.

NOTE This screen is not available for the A/D Input Part.

NOTE Details about the Filter are given on Page 93.

■ Cutoff

Raise or lower the Cutoff frequency for each Element of a Part.

NOTE For each Element, if a combined Low Pass and High Pass Filter is being used, this parameter adjusts the Cutoff frequency of the Low Pass Filter.

❑ **Settings:** -64 ~ 0 ~ +63

■ Reso (Resonance)

Set the amount of Resonance (harmonic emphasis) applied to the signal at the Cutoff frequency. This adds further character to the sound.

❑ **Settings:** -64 ~ 0 ~ +63

TON EG (Tone Envelope Generator)

You can set EG (Envelope Generator) parameters for each Part. There are four parameters governing the transition in output level from the moment a note is pressed on the keyboard to the moment it is released or the point at which the output level has faded to zero.

NOTE This screen is not available for the A/D Input Part.

NOTE For more information, refer to a diagram that illustrate the concept of Envelope Generator, which you can find in Voice or Phrase Clip Edit Mode sections.

Part 1 to 16

```
TON▯EG)  Attack   Decay Sustain Release
Part01     + 0     + 0     + 0     + 0
```

Plug-in 1/2 Part
Multi Plug-in Part

```
TON▯EG)  Attack   Decay         Release
PartP1     + 0     + 0             + 0
```

Phrase Clip Part
Drum Voice Part

```
TON▯EG)  Attack   Decay
PartCL     + 0     + 0
```

■ Attack

Set the transition time from the moment a key on the keyboard is pressed to the point at which the output level of the Part reaches its peak. A positive value will lengthen the transition time and a negative value will shorten it.

❑ **Settings:** -64 ~ 0 ~ +63

■ Decay

Set the transition time from the point at which the output level of the Part reaches its peak to the point at which it levels off. A positive value will lengthen the transition time and a negative value will shorten it.

❑ **Settings:** -64 ~ 0 ~ +63

■ Sustain

Set the output level of the Part maintained while the key on the keyboard is being held down.

NOTE This parameter is not available for Plug-in, Phrase Clip or Drum Voice Parts.

❑ **Settings:** -64 ~ 0 ~ +63

■ Release

Set the transition time from the point at which the note on the keyboard is released to the point at which the output level of the Part reaches zero. A positive value will lengthen the transition time and a negative value will shorten it.

NOTE This parameter is not available for Phrase Clip or Drum Voice Parts.

❑ **Settings:** -64 ~ 0 ~ +63

TON Portamento (Tone Portamento)

You can set the following three Portamento parameters for each Part.

NOTE This screen is not available for A/D Input, Phrase Clip or Drum Voice Parts.

Part 1 to 16

```
TON▯Portamento)  Switch   Time      Mode
Part01              on    127 fulltime
```

Plug-in 1/2 Part
Multi Plug-in Part

```
TON▯Portamento)  Switch   Time
Part17              on    127
```

■ Switch (Portamento switch)

Switch Portamento on or off. With Portamento switched on, there will be a smooth transition in pitch from the first note played to the next note.

❑ **Settings:** off, on

■ Time (Portamento Time)

Set the pitch transition time. Higher values mean longer transition times.

❑ **Settings:** 0 ~ 127

■ Mode (Portamento Mode)

Select the Portamento Mode. The Portamento Mode behavior varies according to the Part Mode (mono/poly) setting in the LYR Mode screen (Page 133).

NOTE This parameter is not available for Plug-in 1/2 and Multi Plug-in Parts.

❑ **Settings:** fingered, fulltime

If Part Mode is set to "mono":

fingered:
Portamento is applied when the keyboard is played legato (a note is played before the previous note is released).

full:
Portamento is applied for all playing styles.

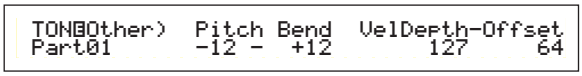
If Part Mode is set to "poly":
Portamento is applied to multiple notes.

TON Other (Tone Other)

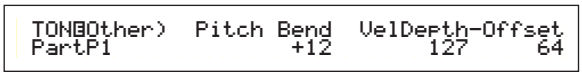
You can set Pitch Bend Range and Velocity Sensitivity parameters for each Part.

NOTE These screens are not available for the A/D Input Part.

Part 1 to 16



Plug-in 1/2 Part
Multi Plug-in Part
Phrase Clip Part
Drum Voice Part



■ Pitch Bend

Set the amount (in semitones) by which the Voice pitch changes when the Pitch Bend Wheel is moved. For example, a Lower setting of -12 means that the pitch of the Voice drops by up to an octave when the Pitch Bend Wheel is moved downwards. An Upper setting of +12 means that the pitch of the Voice rises by up to an octave when the Pitch Bend Wheel is moved upwards.
The Lower parameter is only available for Normal Voice Parts (Parts 1 to 16).

❑ **Settings:**

Lower (Left):
-48 ~ 0 ~ +24

Upper (Right):
-48 ~ 0 ~ +24 (or –24 ~ 0 ~ +24 for Plug-in 1/2 and Multi Plug-in Parts)

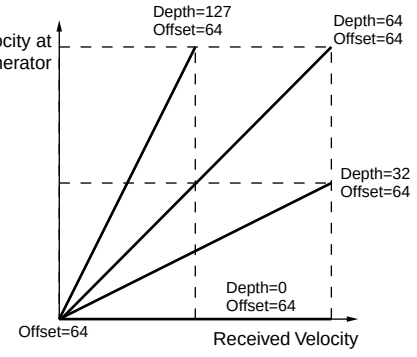
■ VelDepth-Offset (Velocity Sensitivity Depth/Offset)

Set the velocity sensitivity and velocity offset for each Part.

❑ **Settings:**
VelDepth (Velocity Sensitivity): 0 ~ 127
Offset (Velocity Offset): 0 ~ 127

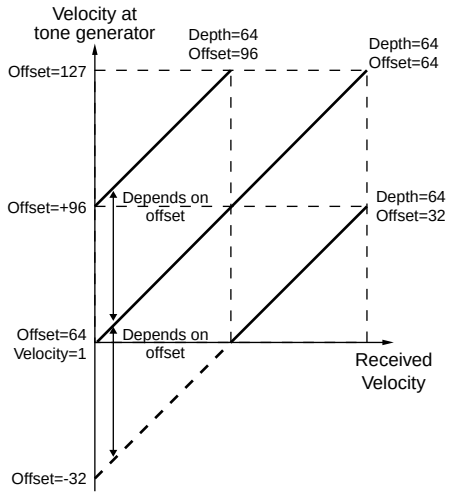
VelDepth (Velocity Sensitivity Depth)
As illustrated below, a large setting will cause large changes in velocity when you play the keyboard.

Changes to velocity curve according to VelDepth (with offset set to 64)



Offset (Velocity Offset)
As illustrated below, the velocity will be increased by the specified amount.

Changes to velocity curve according to VelDepth (with offset set to 64)



Part Layer

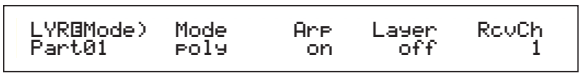
You can set various MIDI parameters for each Part, including MIDI Receive Channel, Arpeggiator switch, note limit and velocity. These parameters are largely used when layering multiple Parts. The following four screens are available.

LYR Mode (Layer Mode)
LYR Limit (Layer Limit)
LYR Tune (Layer Tune)
LYR Out (Layer Out)

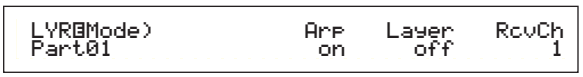
LYR Mode (Layer Mode)

You can set the method by which each Part is output. The parameters will vary according to the Part selected.

Part 1 to 16
Plug-in 1/2 Part



Phrase Clip Part
Drum Voice Part



A/D Input Part
Multi Plug-in Part

■ Mode

Select whether each Part is played back monophonically (single notes only) or polyphonically (multiple simultaneous notes).

NOTE This parameter is only available for Normal Voice Parts 1 to 16 and Plug-in 1/2 Parts.

❑ **Settings:** mono, poly

■ Arp (Arpeggio switch)

Switch the Arpeggiator for the currently selected Part on or off.

NOTE This parameter is not available for A/D Input and Multi Plug-in Parts.

❑ **Settings:** off, on

■ Layer (Layer switch)

When switched on, you can layer up to four Parts.

NOTE This parameter in not available for A/D Input and Plug-in Parts.

❑ **Settings:** off, on

NOTE You can also set the overall output level and stereo pan position of the Layer when this is switched on (Page 119).

NOTE Layers may be slow to sound, depending on their component Parts.

NOTE If you turn five or more Layer Switches "on," only four Parts are enabled for the layer. These four Parts are determined in the priority of Part01 to Part16, PartCL, PartAD, PartP1, then PartP2. For disabled Parts, their Layer switch values will be shown in brackets like "(on)."

■ RcvCh (MIDI Receive Channel)

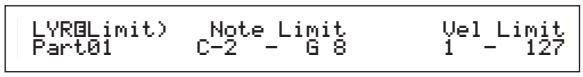
Set the MIDI Receive Channel for each Part. Select "off" for Parts that you do not want to respond to MIDI.

❑ **Settings:** 1 ~ 16, off

LYR Limit (Layer Limit)

You can set note ranges and velocity limits for each Part.

NOTE These parameters are not available for the A/D Input Part.



■ Note Limit

Set the lowest and highest notes of the keyboard range for each Part. Each Part will only sound for notes played within its specified range.

❑ **Settings:** C-2 ~ G8 (for the lowest and highest notes)

NOTE If you specify the highest note first and the lowest note second, for example "C5 to C4," then the note range covered will be "C-2 to C4" and "C5 to G8."

NOTE You can set the lowest and highest notes in the range by pressing notes on the keyboard while holding down the [SHIFT] key.

■ Vel Limit

Set the minimum and maximum values of the velocity range within which each Part will respond. Each Part will only sound for notes played within its specified velocity range.

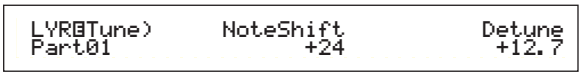
❑ **Settings:** 1 ~ 127 (for the minimum and maximum values)

NOTE If you specify the maximum value first and the minimum value second, for example "93 to 34," then the velocity range covered will be "1 to 34" and "93 to 127."

LYR Tune (Layer Tune)

You can set note shift and tuning parameters for each Part.

NOTE These parameters are not available for the A/D Input Part.



■ NoteShift

Adjust the pitch of each Part in semitones.

❑ **Settings:** -24 ~ +24

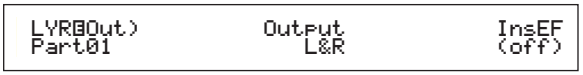
■ Detune

Offset (detune) the pitch of each Part by a very small amount.

❑ **Settings:** -12.8Hz ~ +12.7Hz

LYR Out (Layer Out)

You can select outputs for each Part.



■ Output

Assign each Part to an output.

❑ **Settings:** L&R (Left and Right outputs), ind 1&2 (Individual Output 1&2) ind1 (Individual Output 1), ind2, ind3, ind4, ind5, ind6, drum

NOTE For example, if you choose "L&R," the left channel will be output through OUTPUT L and the right channel will be output through OUTPUT R. Alternatively, if you choose "ind1," the left and right signals will be merged and output monaurally through INDIVIDUAL OUTPUT 1.

NOTE Settings "ind3 to "ind6" are for future expansion purposes and are currently not available.

NOTE You can select "drum" for Drum Voice and Phrase Clip Parts. If you select "drum" for a Drum Voice Part, the output settings for each Drum Key (Page 105) are used. If you select "drum" for the Phrase Clip Part, the output settings for each Clip key (Page 151) are used.

■ **InsEF (Insertion Effect)**
Shows the on/off status of the Insertion Effects. If "on" is displayed, this means that the Part's signal is being sent to the Insertion Effect Unit.

NOTE Insertion Effect switches for each Part are set in the EFF Part screen (Page 127).

Part Receive Switch

Each Part can be set to receive Control Change and Program Change messages. The following four screens are available.

RCV Sw1 (Receive Switch 1)
RCV Sw2 (Receive Switch 2)
RCV Sw3 (Receive Switch 3)
RCV Sw4 (Receive Switch 4)

RCV Sw1 (Receive Switch 1)

When set to "on," each Voice in each Part will receive Control Settings (PB, MW, RB, AT) and Control Change messages. The Controller parameters will vary according to the Part selected.

NOTE This screen is not available for the A/D Input Part.

Parts 1 to 16
Drum Voice Part
Phrase Clip Part

```
RCV■Sw1)      PB      MW      RB      AT
Part01        on     off      on     off
```

Plug-in 1/2 Part
Multi Plug-in Part

```
RCV■Sw1)      PB      MW              AT
PartP1        on     off             off
```

❑ **Settings:**
PB (Pitch Bend Wheel): off, on
MW (Modulation Wheel): off, on
RB (Ribbon Controller): off, on
AT (Aftertouch): off, on

RCV Sw2 (Receive Switch 2)

When set to "on," each Voice in each Part will receive messages from Knob [1]/[2], plus Breath Controller, Foot Controller and Control Change messages.

NOTE This screen is only available for Parts 1 to 16 (including Drum Voice Parts) and the Phrase Clip Part.

Parts 1 to 16
Drum Voice Part
Phrase Clip Part

```
RCV■Sw2)  Knob1   Knob2     BC      FC
Part01      on      off     on     off
```

❑ **Settings:**
Knob1 (Knob [1]): off, on
Knob2 (Knob [2]): off, on
BC (Breath Controller): off, on
FC (Foot Controller): off, on

RCV Sw3 (Receive Switch 3)

When set to "on," each Voice in each Part will receive volume, pan, sustain pedal, foot switch and Control Change messages.

Parts 1 to 16

```
RCV■Sw3)     Vol     Pan     Sus      FS
Part01        on     off      on     off
```

Plug-in 1/2 Part
Multi Plug-in Part

```
RCV■Sw3)     Vol     Pan     Sus
Part01        on     off      on
```

Drum Voice Part
Phrase Clip Part
A/D Input Part

```
RCV■Sw3)     Vol     Pan              FS
PartAD        on     off             off
```

❑ **Settings:**
Vol (Volume): off, on
Pan: off, on
Sus (Sustain): off, on
FS (Foot Switch): off, on

RCV Sw4 (Receive Switch 4)

When set to "on," each Voice in each Part will receive Program Change and Control Change messages when you change Performance Bank/Program.

```
RCV■Sw4)          BankSel PgmChng CtrChng
Part01              off      on     off
```

❑ **Settings:**
BankSel (Bank Select): off, on
PgmChng (Program Change): off, on
CtrChng (Control Change): off, on

Part Controller

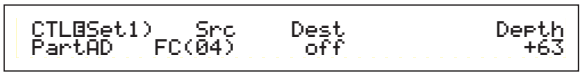
You can set various Controller parameters for the A/D Input Part and Multi Plug-in Parts 17 to 32. The following two screens for A/D Input Part parameters and six screens for the Multi Plug-in Part parameters are available.

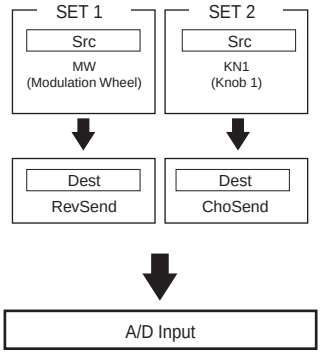
CTL Set1 (Controller Set 1) (A/D Input Part only)
CTL Set2 (Controller Set 2) (A/D Input Part only)

CTL MW Control (MW Control Depth) (Multi Plug-in Parts only)
CTL MW Modulation (MW Modulation Depth) (Multi Plug-in Parts only)
CTL AT Control (AT Control Depth) (Multi Plug-in Parts only)
CTL AT Modulation (AT Modulation Depth) (Multi Plug-in Parts only)
CTL AC Control (AC Control Depth) (Multi Plug-in Parts only)
CTL AC Modulation (AC Modulation Depth) (Multi Plug-in Parts only)

CTL Set1/CTL Set2 (Control Set 1/2) (A/D Input Part only)

The controllers and knobs on the front panel, the keyboard, and so on can be assigned a variety of uses. For example, keyboard aftertouch can be used to control vibrato and the Modulation Wheel could be used to control Resonance. These control assignments are called "Control Sets." You can assign up to two different Control Sets to the A/D Input Part. Thus there are two screens, each for a separate controller: CTL Set1 and CTL Set2.





■ Src (Source)

Set the Controller used to control the parameter specified in Dest. The following controllers are available.

❑ **Settings:** PB (Pitch Bend Wheel), MW (Modulation Wheel), AT (Aftertouch), FC (Foot Controller), FS (Foot Switch), RB (Ribbon Controller), BC (Breath Controller), KN1/2 (Knob [1]/[2])

■ Dest (Destination)

Set the parameter to be controlled by the Controller specified in Src.

❑ **Settings:** see the separate Control List.

■ Depth (Depth)

Set the amount by which the parameter selected in Dest can be controlled.

❑ **Settings:** -64 ~ 0 ~ +63

NOTE Using Voice Control Sets 1 and 2, you can assign individual Src (Source) controllers to multiple Dest (Destination) parameters, or multiple Src controllers to individual Dest parameters. Details are given on Page 85.

CTL MW Control (MW Control Depth) (Multi Plug-in Parts only)

The Modulation Wheel can be used to control Filter and Amp parameters for each Multi Plug-in Part (17 to 32).

■ Filter

Set the amount by which the Modulation Wheel can be used to adjust the filter's Cutoff frequency.

❑ **Settings:** -64 ~ +63

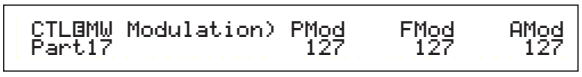
■ Amp

Set the amount by which the Modulation Wheel can be used to adjust the output level (amplitude).

❑ **Settings:** -64 ~ +63

CTL MW Modulation (MW Modulation Depth) (Multi Plug-in Parts only)

The Modulation Wheel can be used to control the amount of pitch/filter/amplitude modulation applied to each Multi Plug-in Part (17 to 32).



■ PMod (Pitch Modulation Depth)

Set the amount by which the pitch modulation changes when the Modulation Wheel is used.

❑ **Settings:** 0 ~ 127

■ **FMod (Filter Modulation Depth)**
Set the amount by which the filter Cutoff frequency changes when the Modulation Wheel is used.

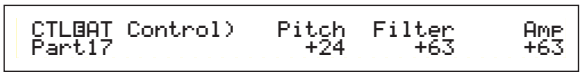
❑ **Settings:** 0 ~ 127

■ **AMod (Amplitude Modulation Depth)**
Set the amount by which the amplitude modulation changes when the Modulation Wheel is used.

❑ **Settings:** 0 ~ 127

CTL AT Control (AT Control Depth) (Multi Plug-in Parts only)

Keyboard aftertouch can be used to control the pitch/filter/amplitude parameters for each Multi Plug-in Part (17 to 32).



■ **Pitch**
Set the amount (in semitones) by which the pitch changes when aftertouch is applied.

❑ **Settings:** -24 ~ +24

■ **Filter**
Set the amount by which the filter Cutoff frequency changes when aftertouch is applied.

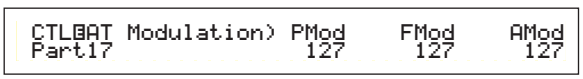
❑ **Settings:** -64 ~ +63

■ **Amp**
Set the amount by which the output level (amplitude) changes when aftertouch is applied.

❑ **Settings:** -64 ~ +63

CTL AT Modulation (AT Modulation Depth) (Multi Plug-in Parts only)

Keyboard aftertouch can be used to control the amount of pitch/filter/amplitude modulation applied to each Multi Plug-in Part (17 to 32).



■ **PMod (Pitch Modulation Depth)**
Set the amount by which the pitch modulation changes when aftertouch is used.

❑ **Settings:** 0 ~ 127

■ **FMod (Filter Modulation Depth)**
Set the amount by which the filter Cutoff frequency changes when aftertouch is used.

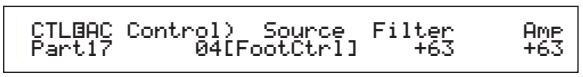
❑ **Settings:** 0 ~ 127

■ **AMod (Amplitude Modulation Depth)**
Set the amount by which the amplitude modulation changes when aftertouch is used.

❑ **Settings:** 0 ~ 127

CTL AC Control (AC Control Depth) (Multi Plug-in Parts only)

Control Changes (Assignable Controllers) can be used to control the filter/amplitude parameters for each Multi Plug-in Part (17 to 32).



■ **Source**
Set the MIDI Control Change number used to control the Filter/Amp parameters.

❑ **Settings:** off, 1 ~ 95

■ **Filter**
Set the amount by which the filter Cutoff frequency changes when the controller (Source) is used.

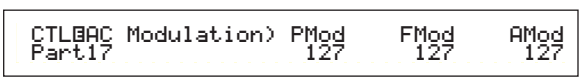
❑ **Settings:** -64 ~ +63

■ **Amp**
Set the amount by which the output level (amplitude) changes when the controller (Source) is used.

❑ **Settings:** -64 ~ +63

CTL AC Modulation (AC Modulation Depth) (Multi Plug-in Parts only)

Control Changes (Assignable Controllers) can be used to control the amount of pitch/filter/amplitude applied to each Multi Plug-in Part (17 to 32).



■ **PMod (Pitch Modulation Depth)**
Set the amount by which the pitch modulation changes when the controller (Source) is used.

❑ **Settings:** 0 ~ 127

■ FMod (Filter Modulation Depth)

Set the amount by which the filter Cutoff frequency changes when the controller (Source) is used.

❑ **Settings:** 0 ~ 127

■ AMod (Amplitude Modulation Depth)

Set the amount by which the amplitude modulation changes when the controller (Source) is used.

❑ **Settings:** 0 ~ 127

Part Insertion Effect (A/D Input Part only)

You can set parameters for the Insertion Effects used by the A/D Input Part. If you have selected the A/D Input Part, as the InsEF (Insertion Effect) in the EFF Part screen, the following screens will be available.

EFF EF1/2 (Insertion Effect 1/2)

Choose the type of effect used for the A/D Input Part. You can select the Effect Category for Insertion Effect 1/2 with the Ctgry parameter and the Effect Type with the Type parameter. After selecting the Effect Type, you can start setting its parameters by pressing the [ENTER] key.

```
EFF▣EF1) Ctgry Type      Dry/Wet [ENTER]
PartAD     DLY:DelayLCR   D<W63 to Edit
```

NOTE The connection between Insertion Effects 1 and 2 is fixed as 1 → 2 (Serial).

■ Ctgry (Effect Category)

Set the Category of the Effect. The first Effect Type of the selected Category will blink.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

■ Type (Effect Type)

Set the type of Effect. This depends on the selected Category. For certain Categories, the Effect Type will blink. In this case, you can press the [ENTER] key to set the Effect Type.

❑ **Settings:** Details are given in the Effect Types list of the separate Data List.

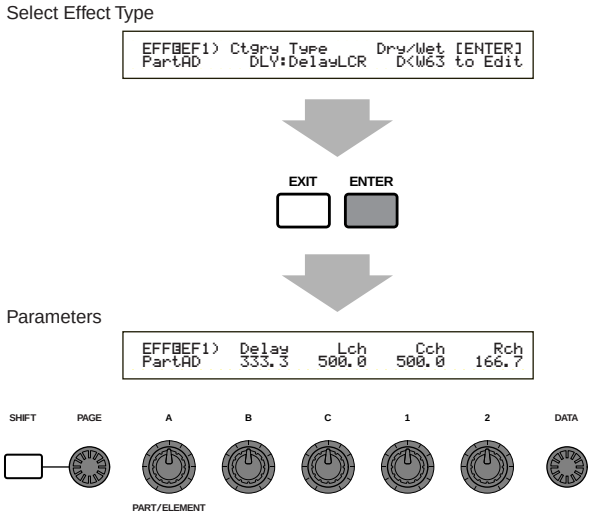
■ Dry/Wet

Set the mix level of the wet signal (which has been passed through the Effects Unit) and the dry signal (which has not been passed through the Effects Unit). This may be unavailable, depending on the selected Effect Type.

❑ **Settings:** D63 > W ~ D = W ~ D < W63

Effect Parameter Settings

These parameters are available when you press the [ENTER] key for certain Effect Types.
Use the [PAGE] knob to switch between screens, and use the other knobs and the [INC/YES] and [DEC/NO] keys to set each parameter.
When you press the [EXIT] key, you will be returned to the Effect Type selection screen.



NOTE The number of parameters and the contents of each screen will vary depending on the selected Effect Type. Details are given in the Effect Type list of the separate Data List.

Zones (CS6x)

You can edit the zones used by Performances in Master Keyboard Mode. Use Knob [A] (or BANK [A] ~ [D] keys) to select the zone (1 to 4), then set the zone's parameters. The following eight screens are available for Master Keyboard parameters.
You can choose zones if "4zone" has been selected as the Mode at the GEN M.Kbd screen (Page 123), and if the [MASTER KEYBOARD] key LED is lit.

- Master keyboard
  MKB Transmit (Master Keyboard Transmit)
  MKB Note (Master Keyboard Note)
  MKB TxSw1 (Master Keyboard Transmit Switch 1)
  MKB TxSw2 (Master Keyboard Transmit Switch 2)
  MKB TxSw3 (Master Keyboard Transmit Switch 3)
  MKB TxSw4 (Master Keyboard Transmit Switch 4)
  MKB TxPreset1 (Master Keyboard Transmit Preset 1)
  MKB TxPreset2 (Master Keyboard Transmit Preset 2)

Master keyboard

MKB Transmit (Master Keyboard Transmit)

You can set parameters for transmitting keyboard data when in Master Keyboard Mode.

■ TrnsCh (Transmit Channel)

Set the MIDI Transmit Channel for each zone.

❑ **Settings:** 1 ~ 16

■ TG (Tone Generator)

Select whether or not to transmit MIDI messages for each zone to each Part's tone generator.

❑ **Settings:** off, on

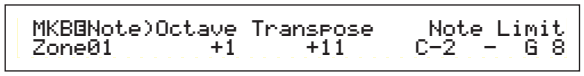
■ MIDI (MIDI Transmit)

Select whether or not to transmit MIDI messages to each zone's MIDI Out port.

❑ **Settings:** off, on

MKB Note (Master Keyboard Note)

You can set Octave, Transpose, Note Limit (key range) for each zone in Master Keyboard Mode.



■ Octave

Shift the note range of each zone up or down (in octaves).

❑ **Settings:** -3 ~ 0 (Default) ~ +3

■ Transpose

Transpose the note range of each zone up or down (in semitones).

❑ **Settings:** -11 ~ 0 (Default) ~ +11

■ Note Limit

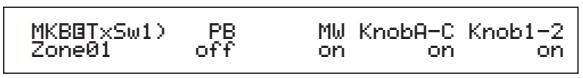
Set the upper and lower notes in each zone's note range.

❑ **Settings:** C-2 ~ G8 (for both upper and lower notes)

NOTE You can also select this parameter by pressing each note while holding down the [SHIFT] key.

MKB TxSw1 (Master Keyboard Transmit Switch 1)

For each zone, you can enable/disable the transmission of messages for the Pitch Bend Wheel, Modulation Wheel, Knobs [A] to [C] and Knob [1]/[2].



❑ **Settings:**
PB (Pitch Bend Wheel): off, on
MW (Modulation Wheel): off, on
KnobA-C (Knobs [A] to [C]): off, on
Knob1/2 (Knob [1]/[2]): off, on

MKB TxSw2 (Master Keyboard Transmit Switch 2)

For each zone, you can enable/disable the transmission of messages for the Ribbon Controller, Foot Controller, Breath Controller and Aftertouch.

❑ **Settings:**
RB (Ribbon Controller): off, on
FC (Foot Controller): off, on
BC (Breath Controller): off, on
AT (Aftertouch): off, on

MKB TxSw3 (Master Keyboard Transmit Switch 3)

For each zone, you can enable/disable the transmission of messages for the Sustain Pedal, Foot Switch, Volume/Foot Volume and Pan knob.

❑ **Settings:**
Sus (Sustain): off, on
FS (Foot Switch): off, on
Vol/FV (Volume/Foot Volume): off, on
Pan: off, on

MKB TxSW4 (Master keyboard Transmit Switch 4)

For each zone, you can enable or disable the transmission of Bank Select and Program Change messages when you switch Performance Banks or Programs.

❑ **Settings:**
Bank (Bank Select): off, on
PC (Program Change): off, on

MKB TxPreset1 (Master Keyboard Transmit Preset 1)

You can set each zone's initial volume and stereo pan settings when changing Performance Bank/Program.

■ Vol (Volume)

Set the output level of the zone.

❑ **Settings:** 0 ~ 127

NOTE This setting is not transmitted if the Vol/FV (Volume/Foot Volume) parameter of the MKB TxSw3 screen has been set to "off."

■ Pan

Set the stereo pan position of the zone.

❑ **Settings:** L64 (Left) ~ C (Center) ~ R63 (Right)

NOTE This setting is not transmitted if the Pan parameter at the MKB TxSw3 screen has been set to "off."

MKB TxPreset2 (Master Keyboard Transmit Preset 2)

For each zone, you can set the Bank Select and Program Change parameters transmitted when changing Bank/Program in a Performance.

■ BankMSB (MIDI Bank Select MSB)

Set the Bank Select MSB transmitted when changing Bank/Program.

❑ **Settings:** 0 ~ 127

■ BankLSB (MIDI Bank Select LSB)

Set the Bank Select LSB transmitted when changing Bank/Program.

❑ **Settings:** 0 ~ 127

NOTE "Bank Select" is a type of MIDI message transmitted when changing Voice Bank. Control Change MSB and LSB messages are combined to form Bank Select messages, which are used to specify the Voice Bank. These message values will vary according to synthesizer. For more details, refer to the documentation that came with your synthesizer.

NOTE This setting is not transmitted if the Bank (Bank Select) parameter at the MKB TxSw4 screen has been set to "off."

■ PC (MIDI Program Change)

Set the Program Number transmitted when changing Bank/Program.

❑ **Settings:** 1 ~ 128

NOTE Program Numbers 001 to 128 directly relate to MIDI Program Change Numbers 000 to 127. That is, Program Numbers and Program Change Numbers differ by a value of 1. Remember to take this into consideration.

NOTE This setting is not transmitted if the PC (Program Change) parameter at the MKB TxSw4 screen has been set to "off."

Performance Job Mode

You can execute various actions (Jobs) in Performance Job Mode. For example, you can "Initialize" Performances (including those currently being edited) or "Recall" previous edits.

When you enter Performance Job Mode, you will first see the Initialize screen. The following four screens are available for each Performance Job.

NOTE Before entering Performance Job Mode and using the Initialize or Recall function, you must select the Performance you wish to operate on (Page 119).

1st screen: PFM Initialize
2nd screen: PFM Edit Recall
3rd screen: PFM Copy
4th screen: PFM Bulk Dump

NOTE Details about how to enter Performance Job Mode are given on Page 22.

Executing a Job

1. In Performance Play Mode, select the Performance Number on which you will execute the Job.
2. Press the [JOB] key to enter Performance Job Mode.
3. Use the [PAGE] knob and switch to the screen showing the Job you wish to execute.

```
PFM Initialize)
Job       Current Perform
```

4. Use Knobs [B]/[C] and Knobs [1]/[2] to select the parameter on which you will execute the Job. (Alternatively, use the [DATA] knob and the [DEC/NO] and [INC/YES] keys.)

   NOTE This step is not applicable for Recall and Bulk Dump Jobs.

5. When you press the [ENTER] key, you will be prompted for confirmation.

```
*PFM Bulk Dump)
   <<   Are you sure?  [YES]/[NO]   >>
```

6. Press the [INC/YES] key to confirm. The message "Completed." will be displayed when the Job has completed, and you will be returned to the original screen.

   Press the [DEC/NO] key to cancel the Job.

   NOTE For Jobs that take longer to process, you will see the message "Executing…" during processing. If you switch off the power to your synthesizer while this message is displayed, you risk corrupting your data.

7. Press the [PERFORM] key to exit Performance Job Mode and return to Performance Play Mode.

PFM Initialize

You can reset (initialize) all parameters of a Performance to their default settings. You can also selectively initialize certain parameters, such as Common settings, settings for each Part, and so on. Note that this is not the same as editing an existing Performance. Instead, it is useful when building a completely new Performance from scratch.

```
PFM Initialize)
Job       Current Perform
```

■ Select type of parameter to Initialize

Use Knob [B], the [DATA] knob or the [DEC/NO] and [INC/YES] keys to select the parameter to be initialized.

❑ **Settings:** Current Perform, Current Common (Common Data: Data common to all Layer Parts), Current Part01 to Part16, Current PartCL (Phrase Clip Part), Current PartAD (A/D Input Part), Current PartP1/P2 (Plug-in Part 1/2), Zone1 to Zone4

PFM Edit Recall

If you are editing a Performance but you do not store it before switching to another Performance, the edits you have made will be cleared. In such a situation, you can use the Recall function to reinstate the edits for the Performance.

```
PFM Edit Recall)
Job
```

PFM Copy

You can copy each Part's parameters and Effects parameters from any Performance to the Performance you are editing. This is useful if you are creating a Performance and wish to use some parameter settings from another Performance.

NOTE This function is not used for copying whole Performances from one location to another. It is used for copying parameter settings from an existing Performance to the current Performance you are editing.

```
PFM Copy)  [Pf:GrandPiano]        Current
Job        INT:128(A16) Part10 > Part16
           ①          ②     ③      ④
```

①Source Performance Memory

Select the Performance Memory containing the Performance (source) from which you will copy parameter settings.

❑ **Settings:** INT (Internal), EXT (External)

②Source Performance Number

Select the Performance Number of the source Performance. The Performance Name is shown in the top line of the display.

❑ **Settings:** 001 ~ 128 (INT), 001 ~ 064(EXT)

NOTE When copying, you can set the current Performance number (destination) for the source Performance number. In this case, if you have edited several settings of the current Performance, you will copy those recent settings, not stored ones (before editing). Therefore, you can edit a Part and copy all edits to another Part.

③Source Performance Part

Select the Part of the source Performance.

❑ **Settings:** Part01 to Part16, PartCL (Phrase Clip Part), PartAD (A/D Input Part), PartP1/P2 (Plug-in Part 1/2)

NOTE The Memory, Bank Select and Program Number settings cannot be copied if you have set the source or destination to something other than Part01 to Part16.

④Destination Part

Set the Part of the destination Performance.

❑ **Settings:** Part01 to Part16, Arp (Arpeggio), Effect, PartCL (Phrase Clip Part), PartAD (A/D Input Part), PartP1/P2 (Plug-in Part 1/2)

NOTE If you choose Arp (Arpeggio) or Effect, the Arpeggio and Effect settings for the Voice assigned to the source Part will be copied.

NOTE The Memory, Bank Select and Program Number settings cannot be copied if you have set the source or destination to something other than Part01 to Part16.

PFM Bulk Dump

You can send all the parameter settings for the current Performance to your computer or some other external MIDI device using Bulk Dump.

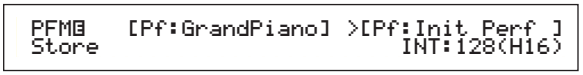
NOTE You must set the correct MIDI Device Number in order to execute a Bulk Dump. Details are given on Page 166.

Performance Store

You can store the parameter settings for up to 128 Performances to each of your synthesizer's Memories (INT: Internal) or up to 64 Performances to Memory Card (EXT: External). The procedure is as follows.

NOTE When you execute this, the settings for the destination Performance will be overwritten. Important data should always be backed up to computer, a separate Memory Card or some other storage device.

❶Press the [STORE] key after editing a Performance. You will see the Performance Store display.

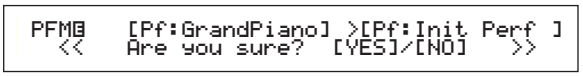


❷Use Knob [1] to select the destination Performance Memory (INT or EXT).

❸Use Knob [2] to select the destination Performance Number.
This will set the Performance Memory/Number to which your Performance will be stored.

NOTE You can also use the [DATA] knob or [DEC/NO] and [INC/YES] keys to execute this operation.

❹When you press the [ENTER] key, you will be prompted for confirmation.



❺Press the [INC/YES] key to confirm. The message "Executing…" will be displayed while the Job is being processed. When it has completed, you will see the message "Completed." and you will be returned to Performance Play Mode.

NOTE You can press the [DEC/NO] key to cancel the Job. This will return you to the original screen.

Phrase Clip Mode

Phrase Clip Play

In Phrase Clip Play Mode, you can select one of four Clip Kits. A Clip Kit is a collection of Phrase Clips (external sounds recorded via microphone, from audio equipment or from other sources) assigned to notes across the keyboard for playback. A Clip Kit can consist of Drum loops or phrases, and can be assigned to a Part in a Performance (Page 39). The screens displayed in Phrase Clip Play Mode are explained here.

You can record Phrase Clips in Phrase Clip Record Mode, and up to 256 Phrase Clips can be stored internally. You can also save these Phrase Clips to Memory Card.

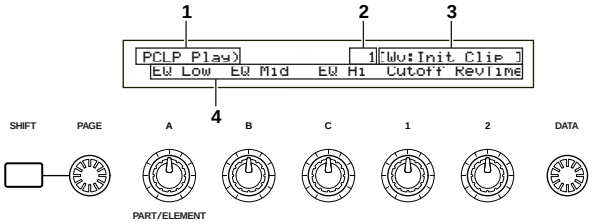
NOTE Basic details about Phrase Clips are given on Page 53.

The Phrase Clip Play Mode Display

When you enter Phrase Clip Play Mode, you will see the following displayed. You can select and play back the Clip Kit here.

NOTE Details about how to enter Phrase Clip Play Mode are given on Page 21.

PCLP Play (Phrase Clip Play)



1. Screen Title

This shows that you are currently in Phrase Clip Play Mode.

2. Clip Kit Number

This shows the Program Number (001 to 004) for the selected Clip Kit.

3. Clip Kit Category/Name

Clip Kit Category

The two letters to the left of the Clip Kit Name are an abbreviation for the Clip Kit Category. The Category gives a rough idea of the kind of sounds in the Clip Kit.

Clip Kit Name

This shows the name of the Clip Kit (up to 10 characters in length).

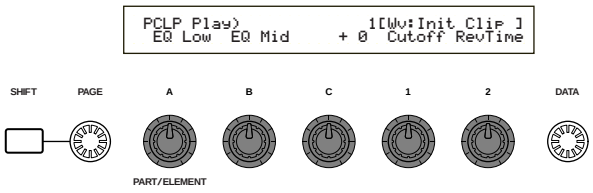
4. Knob Parameter

This shows the names of the functions currently assigned to Knobs [A] to [C] and Knob [1]/[2].

NOTE Multiple parameters can be assigned to Knob [1]/[2], depending on the Control Set settings. In this case, the destination parameter of the lowest numbered Control Set is shown.

Knob Parameter

In Phrase Clip Play Mode, Knobs [A] to [C] and Knob [1]/[2] can be used to adjust the settings of the parameters assigned to them. The parameter values are displayed briefly when you move each knob.



NOTE Details about assigning parameters to Knobs [A] to [C] are given on Page 165. Details about assigning parameters to Knob [1]/[2] are given on Page 84.

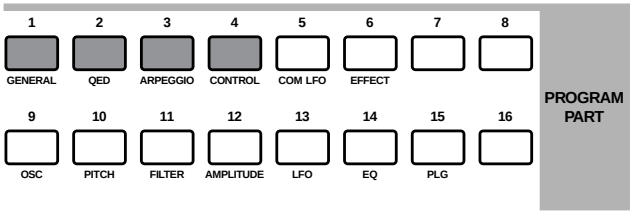
Selecting a Clip Kit Program

There are three ways in which you can select a Clip Kit Program.

- Using the PROGRAM keys (CS6x)
- Using the [DEC/NO] and [INC/YES] keys
- Using the [DATA] knob

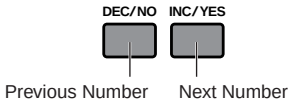
Using the PROGRAM Keys (CS6x)

If you press a PROGRAM key (1 to 4), the Clip Kit corresponding to the Program Number is selected and displayed.



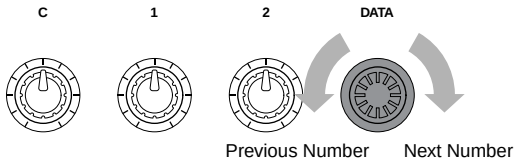
Using the [DEC/NO] and [INC/YES] Keys

If you press the [INC/YES] key, the next Clip Kit is selected and displayed. Pressing the [DEC/NO] key selects the previous Clip Kit.



Using the [DATA] Knob

Turn the [DATA] knob clockwise to increment the Clip Kit Number and anti-clockwise to decrement it.



NOTE The CS6x/CS6R is factory-fitted with 4MB of internal DRAM-type memory. Since DRAM is volatile memory, its contents are cleared when you switch your synthesizer off. Therefore, there are no Phrase Clips contained in memory when you switch your synthesizer on.

NOTE If you raise the pitch of a short Phrase Clip loop, you may hear noise during playback. In which case, you should lengthen of the loop time (Page 150).

NOTE You may also hear noise at the loop end point of the Phrase Clip. In which case, you should adjust the end point of the loop to find the optimum position (Page 151).

Phrase Clip Record

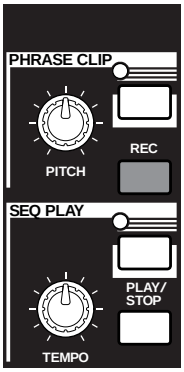
In Phrase Clip Record Mode, you can record sounds into the synthesizer through a microphone or from audio equipment as Phrase Clips. You can then create a Clip Kit consisting of different Phrase Clips spread out across the range of the keyboard, and play the sounds just as you would a normal instrument sound. Furthermore, you can resample Voice/Performance sounds played via the keyboard or the Playback Sequencer. You can store a maximum of 256 Clips (in total of 4 megabytes) in the instrument's internal memory. You can also store them onto an external Memory Card.

NOTE Phrase Clips are stored to Memory Card in a proprietary file format. Details about saving files are given on Page 173. Using the included Card Filer software, Phrase Clips stored on Memory Card can also be saved to, and managed in, a computer connected to the synthesizer.

NOTE Refer to Page 53 for a basic idea of Phrase Clip.

Entering Phrase Clip Record Mode

1 Press the [REC] key in Phrase Clip Play Mode. At the following screen, you can specify the note (Clip Key) on the keyboard used to play back the Phrase Clip.




```
PCLP Rec)  >>   Select Record Key   <<
           >>   C 3:001[CrntSmpl]   <<
```

2 Use Knob [C] while holding down the [REC] key (or press a note on the keyboard) to assign the Clip Key. When you have assigned the Clip Key, release the [REC] key and the Recording screen will appear.

Press the [PHRASE CLIP] key or the [EXIT] key to return to Phrase Clip Play Mode.

```
PCLP Rec) Source Trigger          [ENTER]
(Key=C 3)perform     Key       toStandby
```

■ Source

Select the Source from which you will record.

Select “mic” if you are recording a microphone level device through the A/D INPUT jack.
Select “line” if you are recording from a line level device, such as a CD player or other audio equipment, through the A/D INPUT jack.
Select “voice”, “perform” or “pclip” when recording a Voice, Performance, or an existing Phrase Clip used by the synthesizer. For instance, if you have selected a Voice in Voice Play Mode before entering Phrase Clip Record Mode, you can play that Voice on the keyboard to record it as a Phrase Clip.

❑ **Settings:** mic, line, pclip (Phrase Clip), voice, perform (Performance)

■ Trigger

Set the Mode by which you will trigger the recording process. The Trigger mode will vary according to the currently selected Source.
If “mic” or “line” is currently selected as the Source, select either “level” or “manual.”
If you select “level”, the recording process is automatically started when the input level reaches the designated threshold (Trigger Level). You will see a parameter on the right where you can specify the Trigger Level. Alternatively, if you choose “manual,” recording is started as soon as you press the [ENTER] key.

If you set the Source parameter value to any other than “mic” and “line,” Set this parameter to “key” or “manual.” If you set to “key,” recording will start the moment you hit a key on the keyboard.

❑ **Settings:**
If Source is set to “mic” or “line”: level, manual
If Source is set to “pclip”, “voice” or “perform”: key, manual

■ Level (Trigger Level)

This parameter is only available if you have selected “level” in the Trigger parameter. Recording will begin automatically when the signal at the A/D INPUT jack reaches the Trigger Level. The T indicator is displayed to the left of the Trigger Level setting. Use the Trigger Level pointer and Input Level pointer to visually compare the input signal level with the Trigger Level setting.

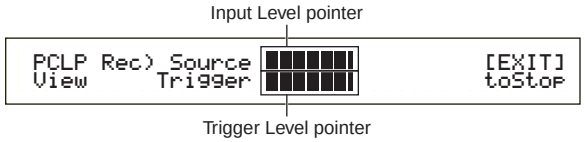
❑ **Settings:** 0 ~ 127

NOTE If the input signal level is too large, The ⚡ indicator is displayed to the left of the T indicator.

The Level Screen

When you are recording from a “mic” or “line” level source in Phrase Clip Record Mode, use the [PAGE] knob to turn to the following screen. You will see the Input Level pointer and the Trigger Level pointer. Here, you can use the Input Level pointer and Trigger Level pointer to check the Trigger Level and the level of the signal at the A/D INPUT connector. If you have selected “level” in Trigger Mode, use Knob [1] to set the Trigger Level. The recording process begins the moment the Input Level Pointer reaches or passes the Trigger Level pointer. Using both the pointer, you can determine the starting point for recording based on the input signal’s level.

NOTE Turning the [PAGE] knob counterclockwise when the Level screen is shown takes you back to the previous screen.



Example 1: Recording a Phrase Clip from a Microphone or Audio Equipment

Connect a microphone or audio equipment to the A/D INPUT jack (Page 14).

1. In Phrase Clip Play Mode, press the [REC] key and the screen for selecting the Clip Key (which is used to play the Phrase Clip) will be shown.

2. While still holding down the [REC] key, use Knob [C] or press a note on the keyboard to set the Clip Key. When you release the [REC] key, you will see the Recording screen.

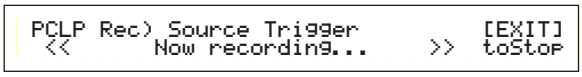
3. Select “mic” if recording from a microphone-level source or “line” if recording from a line-level source such as a CD player or other audio equipment.
You can set the Trigger parameter to “level” or “manual.” If you set it to “level,” you will also need to set the Trigger Level parameter.

4. Turn the [PAGE] knob clockwise to show the Level screen. Here, you can check the Input Level pointer to monitor the level of the input signal. If necessary, you can use the [GAIN] knob on the rear panel to adjust the gain of the input signal.

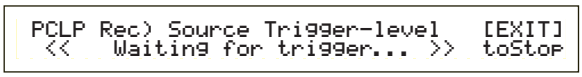
NOTE The recorded clip will automatically be assigned a vacant Clip Number in memory (DRAM). Therefore, you will not have to choose a Clip Number before recording.

❺Now follow the procedure according to the setting made in step ❸.

If set to "manual":
Recording will begin when you press the [ENTER] key.



If set to "level":
Press the [ENTER] key to enter Recording Standby state. You will see the "Waiting for trigger" message displayed. When the level of the input signal reaches or passes the Trigger Level, recording begins automatically.



While recording, you will see the "Now recording..." message displayed.

❻Press the [EXIT] key to stop recording. The "Now recording..." message will disappear.

NOTE If the memory becomes full, recording will automatically stop, even before you press the [EXIT] key.

❼You can now audition the Clip just recorded by pressing the Clip Key selected in step ❷ while holding the [REC] key.

❽If you are not satisfied with the result, you can re-record the Phrase Clip by pressing the [ENTER] key again.

❾When you exit Phrase Clip Record Mode, the Phrase Clip you have recorded will automatically be assigned a new Clip Number and Clip Name, and saved to memory (DRAM) along with the Clip Key setting assigned in step ❷.

❿Repeat steps ❶ to ❾ to record new Phrase Clips.

NOTE Phrase Clip data held in memory (DRAM) will be lost if you switch off your synthesizer. You should always save important Phrase Clip data to Memory Card (Page 173).

NOTE A recorded Clip can be edited in its tones, applied effects, assigned to a Clip Key from a Clip Kit in Phrase Clip Edit Mode. It can also be copied or even deleted in Phrase Clip Job Mode. The Clip Kit that includes the recorded Clip will be selected (from four Clip Kits) and assigned to the Phrase Clip Part in Performance Edit Mode (Page 121).

Example 2: Recording a Phrase Clip from the Internal Tone Generator

You can record a Voice, Performance, an existing Phrase Clip or a Song as a new Phrase Clip.

❶Select a Voice, Performance or Clip Kit in Voice Play Mode, Performance Play Mode or Phrase Clip Play Mode. If you wish to record a phrase of a Song, you will need to prepare the Song file for playback and select the appropriate Performance.

NOTE For a possibly best sound quality, you should maximize the volume of the Voice, Performance or Phrase Clip that you are recording.

❷While still holding down the [REC] key, use Knob [C] or press a note on the keyboard to set the Clip Key. When you release the [REC] key, you will see the Recording screen.

❸Select a recording source by specifying the value (pclip, voice, or perform) for the Source parameter in the Recording screen. Also select a method to start recording in the Trigger parameter — "key" for recording a Voice or Performance played by the keyboard or "manual" for a specific phrase or melody during playback of a song.

NOTE The recorded clip will automatically be assigned a vacant Clip Number in memory (DRAM). Therefore, you will not have to choose a Clip Number before recording.

❹Press the [ENTER] key to enter Recording Standby state. You will see the "Waiting for trigger" message displayed.

❺Now follow the procedure according to the setting made in step ❸.

If set to "key":
Start playback of the song by pressing the SEQ PLAY [START/STOP] key.

If set to "manual":
Start playback of the song by pressing the SEQ PLAY [START/STOP] key. Start recording of a Phrase Clip at any necessary moment by pressing the [ENTER] key.

While recording, you will see the "Now recording..." message displayed.

❻Press the [EXIT] key to stop recording. The "Now Recording..." message will disappear.

NOTE If the memory becomes full, recording will automatically stop, even before you press the [EXIT] key.

❼You can now audition the Clip just recorded by pressing the Clip Key selected in step ❷ while holding the [REC] key.

❽If you are not satisfied with the result, you can re-record the Phrase Clip by pressing the [ENTER] key again.

❾When you exit Phrase Clip Record Mode, the Phrase Clip you have recorded will automatically be assigned a new Clip Number and Clip Name, and saved to memory (DRAM) along with the Clip Key setting assigned in step ❷.

❿Repeat steps ❶ to ❾ to record new Phrase Clips.

NOTE Phrase Clip and Clip Kit data held in memory (DRAM) will be lost if you switch off your synthesizer. You should always save important Phrase Clip and Clip Kit data to Memory Card (Page 173).

NOTE After recording from the internal tone generator, the recorded Phrase Clip will automatically be normalized (Ratio = 100 %). For more information about normalization, refer to Page 157.

NOTE A recorded Clip can be edited in its tones, applied effects, assigned to a Clip Key from a Clip Kit in Phrase Clip Edit Mode. It can also be copied or even deleted in Phrase Clip Job Mode. The Clip Kit that includes the recorded Clip will be selected (from four Clip Kits) and assigned to the Phrase Clip Part in Performance Edit Mode (Page 121).

Phrase Clip Edit

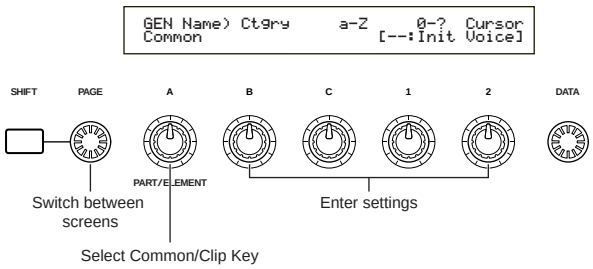
The parameters available when editing a Clip Kit are explained here.
A Clip Kit is a collection of Phrase Clips assigned across the keyboard (notes C0 to C6) for playback.

For editing a Clip Kit, there are five Common Edit screens (for parameters which apply to the current clip kit). There are also five screens for Clip Key parameters (used to assign Phrase Clips to notes on the keyboard).

NOTE Details about recording Phrase Clips are given on Pages 55, 143.

When you enter Phrase Clip Edit Mode, you will see the following screen.
Basically, Knob [A] is used to select the type of parameter you wish to edit (Common/Clip Key). The Clip Key is selected by pressing the relevant note on the keyboard.

The [PAGE] knob is used to switch between the parameter screens, and Knobs [B], [C], [1] and [2] are used to enter parameter settings. Alternatively, you can use the [DATA] knob, and [DEC/NO] and [INC/YES] keys to enter settings.



You can use Knobs [A] to [C] and Knob [1]/[2] while holding down the [SHIFT] key to move the cursor to each respective parameter. The cursor can also be moved using the [DATA] knob or the [DEC/NO] and [INC/YES] keys while holding down the [SHIFT] key.

NOTE You must select the Clip Kit you wish to edit before entering Phrase Clip Edit Mode (Page 142). All parameter settings will be set for each Clip Kit, and can be stored.

NOTE If you switch the synthesizer off, your Phrase Clip data in internal memory will be lost. You should always save important Phrase Clip data to Memory Card (Page 173).

NOTE Details about how to enter Phrase Clip Edit Mode are given on Page 22.

NOTE A general overview of Phrase Clips is given on Page 53.

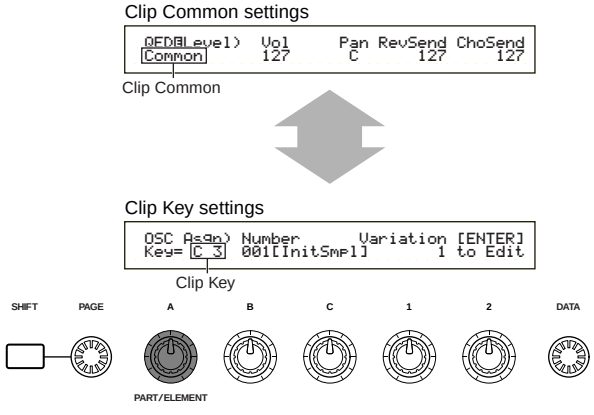
Most of these parameters are the same as for Drum Voices (the gray items in the tree diagram). Therefore, the parameters which differ are explained here.

NOTE Those parameters which do not differ are explained in the Voice Edit Mode section (Page 78).

Phrase Clip Edit Mode
- Common
  - Clip Common General 80
    - GEN Name (General Name) 80
  - Clip Common Quick Edit 147
    - QED Level (Quick Edit Level) 147
    - QED EffectCtrl (Quick Edit Effect) 148
    - QED Filter (Quick Edit Filter) 148
    - QED EG (Quick Edit Envelope Generator) 148
  - Clip Common Arpeggio 82
    - ARP Type (Arpeggio Type) 82
    - ARP Limit (Arpeggio Note Limit) 83
    - ARP Mode (Arpeggio Mode) 83
    - ARP PlayEF (Arpeggio Play Effect) 83
  - Clip Common Controller 148
    - CTL Set1 (Control Set 1) 149
    - CTL Set2 (Control Set 2) 149
    - CTL Set3 (Control Set 3) 149
    - CTL Set4 (Control Set 4) 149
    - CTL Set5 (Control Set 5) 149
  - Clip Common Effect 88
    - EFF InsEF (Insertion Effect) 88
    - EFF EF1 (Effect 1) 88
    - EFF EF1 (Effect 2) 88
    - EFF Rev (Reverb) 89
    - EFF Cho (Chorus) 89
- Clip Key
  - Clip Key OSC (Oscillator) 149
    - OSC Asgn (Oscillator Assign) 149
    - OSC Out (Oscillator Out) 151
    - OSC Pan (Oscillator Pan) 151
    - OSC Other (Oscillator Other) 151
  - Clip Key Pitch 152
    - PCH Tune (Pitch Tune) 152
  - Clip Key Filter 152
    - FLT Cutoff (Filter Cutoff) 152
  - Clip Key Amplitude 152
    - AMP AEG (Amplitude Envelope Generator) 153
    - AMP VelSens (Amplitude Velocity Sensitivity) 153
  - Clip Key EQ (Equalizer) 101
    - EQ Type 101
    - EQ Param (EQ Parameter) 101

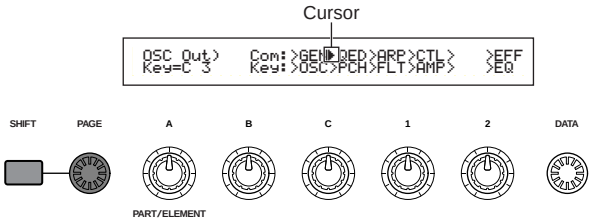
Clip Common Edit and Clip Key Edit

A Clip Kit consists of Phrase Clips (waves) assigned to notes C0 to C6 on the keyboard (Page 55). Parameters common to all Phrase Clips are known as a "Clip Common Edit." In Phrase Clip Edit Mode, screens are available for Clip Common Edit and for each editing Clip Key. Use Knob [A] to switch between these screens.



Menu Display

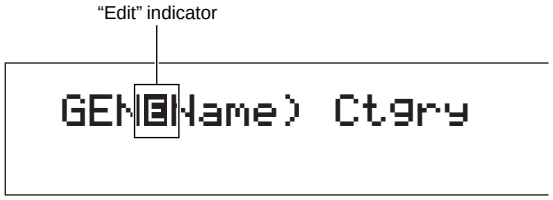
You will see the following if you use the [PAGE] knob while holding down the [SHIFT] key. Use the [PAGE] knob to move the cursor to the parameter you wish to edit, then release the [SHIFT] key to jump to the screen you were previously at.



NOTE For CS6x, you can directly make access to a specific Menu screen using a PROGRAM/PART key (Page 80).

The E Indicator

If you alter any parameters in Phrase Clip Edit Mode, the E indicator will be displayed at the top left of the screen. This gives a quick indication that the current Clip Kit has been modified but not yet stored.



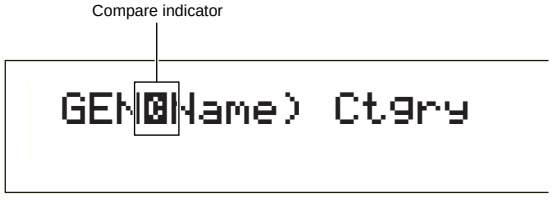
NOTE Even if you exit to Phrase Clip Play Mode, the edited settings for the current Clip Kit will not be lost so long as you do not select another Clip Kit.

NOTE The E indicator will also be displayed in Phrase Clip Play Mode.

The "Compare" Function

Use this to listen to the difference between the Phrase Clip with your edited settings and the Phrase Clip prior to editing.

1. Press the [COMPARE (EDIT)] key while in Phrase Clip Edit Mode. The E indicator at the top left of the screen will change to the C indicator and the Phrase Clip settings prior to editing will temporarily be reinstated for comparison purposes.



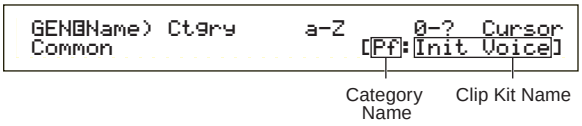
NOTE While the "Compare" function is enabled, editing will not be possible using Knobs [A] to [C] or Knob [1]/[2].

2. Press the [EDIT] key again to disable the "Compare" function and restore the settings for your edited Phrase Clip.

Clip Common General

GEN Name (General Name)

You can set a Clip Kit Name consisting of up to 10 characters. You can also select the Category Name to the left of the Clip Kit Name.



NOTE The Clip Kit Name is set in the same way as the Voice Name. Details are given on Page 80.

Clip Common Quick Edit

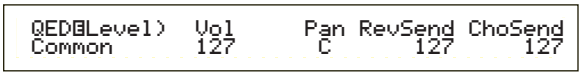
Various parameters control the sonic properties of the Clip Kit, and many can be edited using the Sound Control knobs on the front panel of the CS6x. There are four screens.

QED Level (Quick Edit Level)
QED EffectCtrl (Quick Edit Effect)
QED Filter (Quick Edit Filter)
QED EG (Quick Edit Envelope Generator)

NOTE In Performance Mode, the Phrase Clip Part settings are used.

QED Level (Quick Edit Level)

These parameters control the output level and pan position of the Clip Kit.



■ Vol (Volume)

Set the output level of the Clip Kit.

❑ **Settings:** 0 ~ 127

■ Pan

Set the stereo pan position of the Clip Kit. You can also adjust this parameter using the [PAN] knob on the front panel of the CS6x.

❑ **Settings:** L63 (Left) ~ C (Center) ~ R63 (Right)

■ RevSend (Reverb Send)

Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect. You can also adjust this parameter using the [REVERB] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

■ **ChoSend (Chorus Send)**
Set the Send level of the signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect. You can also adjust this parameter using the [CHORUS] knob on the front panel of the CS6x.

❑ **Settings:** 0 ~ 127

QED EffectCtrl (Quick Edit Effect)

Set the amount of Chorus applied to the entire Clip Kit.

```
QED▣EffectControl)                    Chorus
Common                                  +63
```

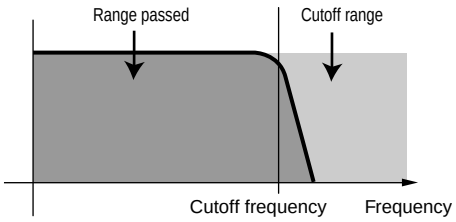
■ **Chorus**
Set the Return level of the Chorus effect as an offset value.

❑ **Settings:** -64 ~ 0 ~ +63

QED Filter (Quick Edit Filter)

These parameters control filters which control the tonal quality of the Clip Kit. With the Low Pass Filter, frequencies falling below the set Cutoff frequency are passed, and frequencies above the Cutoff frequency are blocked.

```
QED▣Filter)                      Cutoff    Reso
Common                             +63     +63
```



■ **Cutoff**
Set the Cutoff frequency. Only frequencies below this point are passed. You can also adjust this parameter using the [CUTOFF] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

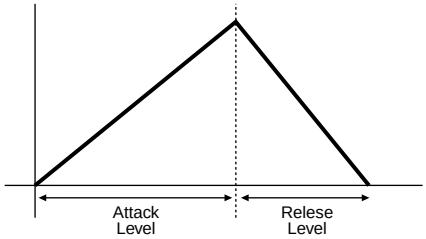
■ **Reso (Resonance)**
Set the amount of Resonance (harmonic boost) applied to the signal around the Cutoff frequency. This is a useful way of adding further character to the sound. You can also adjust this parameter using the [RESONANCE] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

QED EG (Quick Edit Envelope Generator)

These two parameters control the change in the output level of a Clip Kit over the time that a note is played.

```
QED▣EG)  Attack   Decay
Common     +63     +63
```



■ **Attack**
Set the transition time from the moment a note on the keyboard is pressed to the point at which the level of the Phrase Clip reaches its peak. You can also adjust this parameter using the [ATTACK] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

■ **Decay**
Set the transition time from the point at which the level of the Phrase Clip reaches its peak to the point at which it levels off. You can also adjust this parameter using the [DECAY] knob on the front panel of the CS6x.

❑ **Settings:** -64 ~ 0 ~ +63

Clip Common Arpeggio

The following four parameters control the behavior of the Arpeggiator. These parameters are the same as those used in Voice Edit Mode, and more details about them are given on Page 82.

ARP Type (Arpeggio Type)
ARP Limit (Arpeggio Note Limit)
ARP Mode (Arpeggio Mode)
ARP PlayEF (Arpeggio Play Effect)

Clip Common Controller

You can set up to five Controllers for each Clip Kit. The following five screens are available.

CTL Bend (Pitch Bend)
CTL Set1 (Control Set 1)
CTL Set2 (Control Set 2)
CTL Set3 (Control Set 3)
CTL Set4 (Control Set 4)

CTL Bend (Pitch Bend)

You can set a range of pitch change controlled by Pitch Bend Wheel.

```
CTL@PitchBend)              Lower   Upper
C 1234                        -12     +12
```

■ **Lower**

Set a range of pitch change by semitone when you move the wheel downward. With a value of "-12," you can lower the pitch at a maximum of one octave when you move the wheel downward.

❑ **Settings:** -48 ~ 0 ~ + 24

■ **Upper**

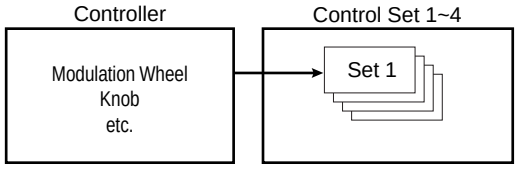
Set a range of pitch change by semitone when you move the wheel upward. With a value of " + 12," you can raise the pitch at a maximum of one octave when you move the wheel upward.

❑ **Settings:** -48 ~ 0 ~ + 24

CTL Set1 (Control Set 1) to CTL Set4 (Control Set 4)

The controllers and knobs on the front panel, the keyboard, and so on can be assigned a variety of uses. For example, keyboard aftertouch can be used to control the Reverb Send level and the Foot Switch (if connected) could be used to control other Effect parameters. These control assignments are called "Control Sets." You can assign up to four different Control Sets per Clip Kit. Thus there are four screens, each for a separate controller: CTL Set1 to CTL Set4.

```
CTL@Set1)   Src     Dest              Depth
Common   FC(04)     amp                +63
```



These parameters are the same as for Normal Voices (except for The ElemSw parameter, which is available only for Normal Voices). For more information about parameters of a Normal Voices, see Page 84.

NOTE Refer to Basics Section (Page 49) for more information about assignment of a Control Set.

Clip Common Effect

You can set two types of Insertion Effects, plus two System Effects (Reverb and Chorus). The following five screens are available. The parameters are the same as those used in Voice Edit Mode. Details are given on Page 88.

EFF InsEF (Insertion Effect)
EFF EF1 (Effect1)
EFF EF2 (Effect2)
EFF Rev (Reverb)
EFF Cho (Chorus)

Clip Key OSC (Oscillator)

You can set the parameters for the Phrase Clips which make up the Clip Kit. A Clip Kit can contain up to 73 Clips, each of which is assigned to a specific note (Clip Key) within a range of C0 to C6. In this Menu, you can assign a Clip to each Clip Key and make detailed settings using four screens below.

OSC Asgn (Oscillator Assign)
OSC Out (Oscillator Out)
OSC Pan (Oscillator Pan)
OSC Other (Oscillator Other)

OSC Asgn (Oscillator Assign)

You can select the Phrase Clips assigned to the Clip Keys in the Clip Kit. Use Knob [A] to select the Clip Key, then use Knob [B] to select the Phrase Clip. Use Knob [1] to select the Variation. The Variation controls the way in which a Phrase Clip is played back, and up to eight Variations can be assigned to each Phrase Clip. Press [ENTER] key at this screen to enter settings for Variations.

```
OSC Asgn) Number       Variation [ENTER]
Key=C 3   001[InitSmpl]       1 to Edit
```

■ **Number (Clip Number)**

Select the Phrase Clip Number. The Phrase Clip Name will be displayed to the right of the Phrase Clip Number. The Phrase Clip can be played back in different ways, depending on the current Variation parameter setting.

❑ **Settings:** 000 (off) ~ 256

NOTE If you select "off," the Clip Key has no Phrase Clips assigned to it.

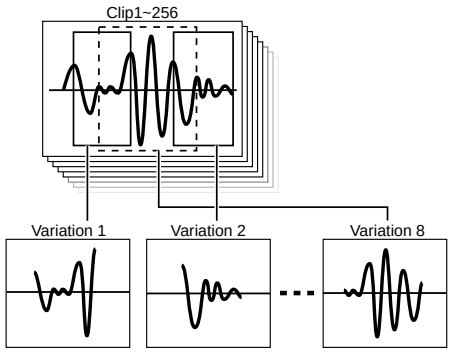
■ **Variation**

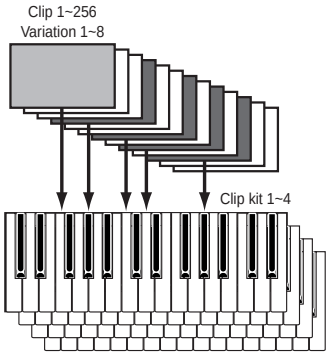
Select the Variation Number. This controls the way in which the Phrase Clip is played back.

❑ **Settings:** 1 ~ 8

Variation Settings

You can play back a Phrase Clip in up to eight different ways (Variations). They are related to the Clip Kit as shown in the illustration.





Select the Phrase Clip at the OSC Asgn (Oscillator Assign) screen, then press the [ENTER] key. You will see the Variation Edit screen.

• PCLP Var (Phrase Clip Variation)
You can edit the settings of each Variation in the currently selected Phrase Clip.
Select the Variation (1 to 8), set each of its parameters, then press the [EXIT] key. The settings will be applied and you will be returned to the OSC Asgn (Oscillator Assign) screen.

```
 PCLP Var)  Play    Start     Loop      End
(C 3)=1:  oneshot 2097150 2097150 2097150
```

■ Var (Variation Number)

Select the Variation. Its settings will be reflected in each parameter.

❑ **Settings:** 1 ~ 8

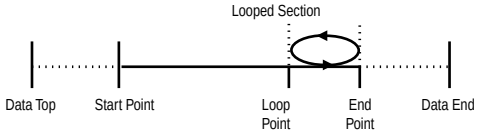
NOTE If you change the Variation Number with this parameter, it will automatically change one that is set in the OSC Asgn (Oscillator Assign) screen.

■ Play (Play Mode)

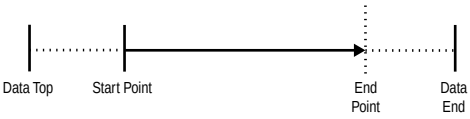
Select the Phrase Clip playback method. There are three modes.

❑ **Settings:**

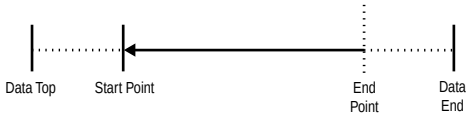
loop:
When you press a note on the keyboard, the Phrase Clip is played completely from its Start Point. Then its looped section is played back repetitively until you release the note.



oneshot:
When you press a note on the keyboard, the Phrase Clip is played just once from its Start Point to its End Point (not looped).

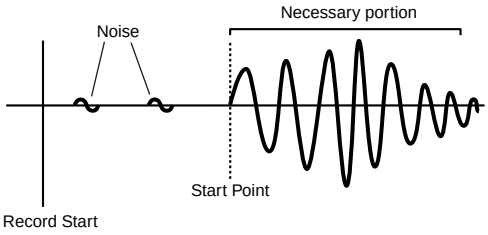


reverse:
When you press a note on the keyboard, the Phrase Clip is played in reverse, just once, from its End Point to its Start Point (not looped).



■ Start (Start Point)

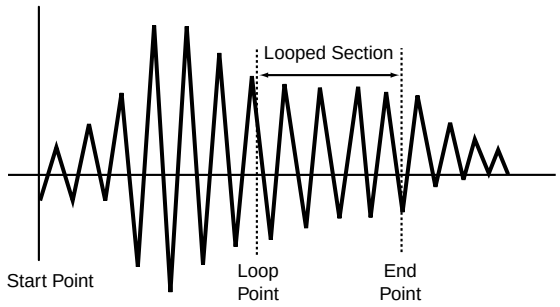
Set the Start Point from which the Phrase Clip will be played back (as shown in the illustration below). In this case, you can avoid playback of the noise before the Start Point. Note that this setting does not eliminate the noise in the original Clip.



❑ **Settings:** Depends on the length of the Phrase Clip

■ Loop (Loop Point)

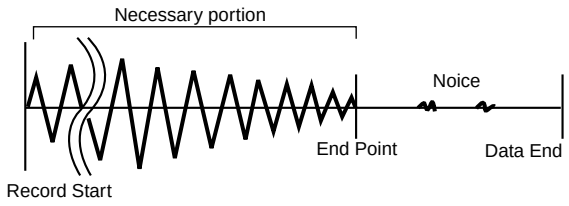
Set the starting point of the looped section. With a violin sound, for example, the Loop Point should be set after the distinctive attack portion and at the start of the sustained section of the sound. When playing back this loop, the distinctive attack portion of the violin sound is played back, followed by the looped section corresponding with the sustained section of the violin sound (between the Loop Point and the End Point.) On the other hand, if the sound does not have a distinctive attack portion, the Loop Point can be set to the same position as the Start Point.



❑ **Settings:** Depends on the length of the Phrase Clip

■ End (End Point)

Set the End Point of the Phrase Clip's looped section. This can also be useful for removing unwanted noise at the end of the Phrase Clip.



❑ **Settings:** Depends on the length of the Phrase Clip.

OSC Out (Oscillator Out)

You can set the following output parameters for each Clip Key of a Clip Kit.

```
OSC Out)  Level   InsEF RevSend ChoSend
Key=C 3     127    thru      64     127
```

■ Level

Set the output level of each Clip Key.

❑ **Settings:** 0 ~ 127

■ InsEF (Insertion Effect)

Set the Insertion Effect to which the output signal from each Clip Key is sent. The Insertion Effect is bypassed if you select thru.

❑ **Settings:** thru, ins1 (Insertion Effect 1), ins2 (Insertion Effect 2)

■ RevSend (Reverb Send)

Set the Send level of the Clip Key signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Reverb effect.

❑ **Settings:** 0 ~ 127

■ ChoSend (Chorus Send)

Set the Send level of the Clip Key signal sent from Insertion Effect 1/2 (or the bypassed signal) to the Chorus effect.

❑ **Settings:** 0 ~ 127

NOTE Details about Effects are given on Page 65.

OSC Pan (Oscillator Pan)

You can set the following Pan parameters for each Clip Key in the Clip Kit.

```
OSC Pan)    Pan    Altar Random  Output
Key=C 3      C      L63     63     L&R
```

■ Pan

Set the stereo Pan position for each Clip Key. This will also be used as the basic Pan position for the Alternate, Random and Scale settings.

❑ **Settings:** L63 (Left) ~ C (Center) ~ R63 (Right)

■ Alter (Alternate)

Set the amount by which the sound is panned alternately left and right for each note you press. The Pan setting is used as the basic Pan position.

❑ **Settings:** L64 ~ 0 ~ R63

■ Random

Set the amount by which the sound is panned randomly left and right for each note you press. The Pan setting is used as the basic Pan position.

❑ **Settings:** 0 ~ 127

■ Output

Assign each Clip Key to an output.

❑ **Settings:** L&R (OUTPUT L and R), ind 1&2 (INDIVIDUAL OUTPUT 1 and 2), ind1 (INDIVIDUAL OUTPUT 1), ind2, ind3, ind4, ind5, ind6

NOTE Settings "ind3 to "ind6" are for future expansion purposes and are currently not available.

NOTE For example, if you select "ind 1&2," the left channel will be output through INDIVIDUAL OUTPUT 1 and the right channel will be output through INDIVIDUAL OUTPUT 2.

OSC Other (Oscillator Other)

You can set parameters which govern the sound of each Clip Key of a Clip Kit.

```
OSC Other)          KeyOn  Assign  AltGrp
Key=C 3           normal  single     off
```

■ KeyOn

Select the Key On method. There are two methods: normal and hold.

❑ **Settings:**

normal:
Pressing a Clip Key starts playback of a Clip. Playback will continue until the key is released.

hold:
Pressing a Clip Key triggers playback of a Clip. Playback will continue after the key is released, until another Clip Key is pressed.

■ Assign

Set Key Assign to "single" to prevent the doubled playback of the same received notes. Select "multi" to consecutively assign each instance of the same received note to a separate channel.

❑ **Settings:** single, multi

■ AltGrp (Alternate Group)

You can prevent different Phrase Clips from playing back simultaneously by assigning them to the same Alternate Group. This is useful, for example, when you want to prevent drum loops from overlapping during playback. Up to 127 Alternate Groups can be defined. You can also select "off" here if you wish to allow the simultaneous playback of all Phrase Clips.

❑ **Settings:** off, 1 ~ 127

Clip Key Pitch

Set the pitch of each Clip Key. The tunings and Pitch EG parameters can be set for each Clip Key.

PCH Tune (Pitch Tune)

■ Coarse

Adjust the pitch of each Phrase Clip in semitones.

❑ **Settings:** -48 ~ 0 ~ +48

■ Fine

Fine-tune the pitch of each Phrase Clip.

❑ **Settings:** -64 ~ 0 ~ +63

■ VelSens (Velocity Sensitivity)

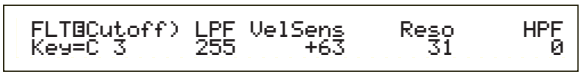
Set the velocity sensitivity of the pitch. Positive settings will cause the pitch to become raised when you play the keyboard harder (for a large Velocity value). Negative settings will cause it to become lowered.

❑ **Settings:** -64 ~ 0 ~ +63

Clip Key Filter

You can apply filter settings to Clip Keys. A Low Pass Filter and High Pass Filter can be applied per Phrase Clip to change its tonal characteristics.

FLT Cutoff (Filter Cutoff)



■ LPF (Low Pass Filter)

Set the Cutoff frequency of the Low Pass Filter. Only frequencies below this point are passed. You can then use the Reso (Resonance) parameter to add further character to the sound.

❑ **Settings:** 0 ~ 255

NOTE Details about the Low Pass Filter are given on Page 93.

■ VelSens (Velocity Sensitivity)

Set the velocity sensitivity of the Low Pass Filter Cutoff frequency. Positive settings will cause the cutoff frequency to become higher when you play the keyboard harder (for a large Velocity value), resulting in a drastic change in tones. Negative settings will cause it to become lower.

❑ **Settings:** -64 ~ 0 ~ +63

■ Reso (Resonance)

Set the amount of Resonance (harmonic emphasis) applied to the signal at the Cutoff frequency. This can be used in combination with the Cutoff frequency of the Low Pass Filter to add further character to the sound.

❑ **Settings:** 0 ~ 31

NOTE Details about Resonance are given on Page 40.

■ HPF (High Pass Filter)

Set the Cutoff frequency of the High Pass Filter. Only frequencies above this point are passed.

❑ **Settings:** 0 ~ 255

NOTE Details about the High Pass Filter are given on Page 94.

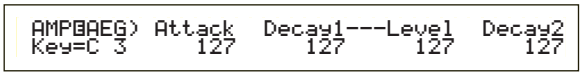
Clip Key Amplitude

You can set amplitude (output level) parameters for each Phrase Clip. The following two screens are available.

AMP AEG (Amplitude Envelope Generator)
AMP VelSens (Amplitude Velocity Sensitivity)

AMP AEG (Amplitude Envelope Generator)

The Amplitude Envelope Generator controls the change in amplitude from the moment a note in pressed on the keyboard to the moment it is released. By setting the Attack Time, Decay 1/2 Time and the Decay 1 Level, you can determine how fast the sound reaches its peak amplitude and how it fades out. Parameters can be set for each Clip Key.



■ **Attack (Attack Time)**
Set the Attack Time.

❑ **Settings:** 0 ~ 127

■ **Decay1 (Decay 1 Time)**
Set the Decay Time.

❑ **Settings:** 0 ~ 127

■ **Level (Decay 1 Level)**
Set the Decay 1 Level.

❑ **Settings:** 0 ~ 127

■ **Decay2 (Decay 2 Time)**
Set the Decay 2 Time.
With this parameter set to "hold," the volume level will be held at Decay 1 Level (shown in the following illustration) until the key is released.

❑ **Settings:** 0 ~ 126, hold

AMP VelSens (Amplitude Velocity Sensitivity)

You can define how the amplitude (output level) varies according to the velocity of the received notes.

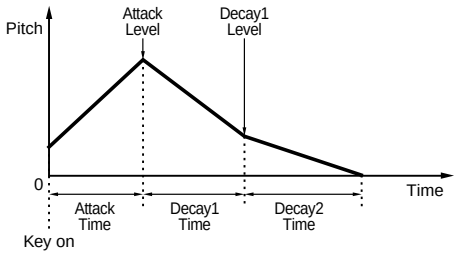
■ **Level**
Set the velocity sensitivity of the Amplitude's output level. Positive settings will cause the output level to rise the harder you play the keyboard and, conversely, negative values will cause it to fall.

❑ **Settings:** -64 ~ 0 ~ +63

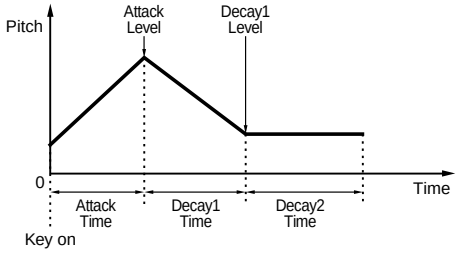
Amplitude Envelope Generator Settings

The Amplitude Envelope Generator has three Time parameters and one Level parameter. These govern the transitions between output levels for the duration of a note. The Attack Time is the time taken for the sound to reach its peak output level from the moment a note is played on the keyboard. The Decay 1/2 Time and the Decay 1 Level parameters are used to set the behavior of the remainder (between the sound's peak output level and the point at which it fades to zero). Furthermore, you can set these parameters to be sensitive to note velocity.

NOTE The Attack Level is fixed at its maximum value.



Decay2 = hold



Clip Key EQ (Equalizer)

You can set Equalizer parameters for each Clip Key. The following two screens are available. These parameters are the same as those in Voice Edit Mode, and details are given on Page 101.

EQ Type (EQ Type)
EQ Param (EQ Parameter)

Phrase Clip Job Mode

In the Mode, you can execute various operations (jobs) on the Phrase Clips that you have created/edited in Phrase Clip Edit Mode, such as delete, copy and normalize.
You will see the 1st screen (PCLP Status) when you enter Phrase Clip Job Mode. There are 14 screens for Phrase Clip Jobs, as follows.

NOTE Before you can execute a Phrase Clip Job in Phrase Clip Job Mode, you need to select the Clip Kit (Page 142).

1st screen: PCLP Status
2nd screen: PCLP Rename
3rd screen: PCLP VariationSet
4th screen: PCLP LoopRemix
5th screen: PCLP Normalize
6th screen: PCLP FreqConvert (Frequency Convert)
7th screen: PCLP Extract
8th screen: PCLP Delete
9th screen: PCLP Copy
10th screen: PCLP SampleRcv (Sample Receive)
11th screen: PCLP AutoKeyMap
12th screen: PCLP Kit Key Copy
13th screen: PCLP Kit Key Initialize
14th screen: PCLP Kit Initialize

NOTE Details about how to enter Phrase Clip Job Mode are given on Page 22.

Executing a Job

1. In Phrase Clip Play Mode, select the Clip Kit on which you wish to execute a Job.

2. Press the [JOB] key to enter Phrase Clip Job Mode.

3. Use the [PAGE] knob to switch to the screen for the Phrase Clip Job you wish to execute. The selected Job will be displayed.

```
PCLP LoopRemix)                Type    Vari
JOB  C 2:001[SmplName]          1       A
```

4. Use Knobs [A], [B], [C], [1] and [2] to enter each of the parameter settings. (You can also use the [DATA] knob and the [DEC/NO] and [INC/YES] keys.)

   NOTE Most Jobs are executed to a Clip Key or Clip assigned to a Clip Key. You can select a target Clip Key Number using Knob [A] or a target Clip Number using Knob [B].

   NOTE When you specify a Phrase Clip by its number, you can select a Clip not assigned to a key note on the keyboard. You may assign that Clip to a key note in Phrase Clip Edit Mode so that you can play it in Phrase Clip Edit Mode (Page 146).

   NOTE You will not need to follow the next two steps at the 1st screen (PCLP Status).

5. When you press the [ENTER] key, you will see a confirmation message.

```
PCLP LoopRemix)                Type    Vari
 <<    Are You Sure  [YES]/[NO]    >>
```

6. Press the [INC/YES] key to execute each Job. The message “Completed.” will be displayed after the job has executed, and you will be returned to the previous screen.

   The Job will be canceled if you press the [DEC/NO] key.

   NOTE If the Phrase Clip Job takes some time to execute, you will see the message “Executing...” If you switch the power off in this state, the data may be damaged.

7. If you press the [EXIT] key, you will be taken out of Phrase Clip Job Mode and returned to Phrase Clip Play Mode.

   NOTE The steps in each procedure may vary slightly, depending on the Job being performed. Refer to the explanation of each Job for details.

   NOTE The following Jobs are available only when the Phrase Clip has been recorded in 16-bit format.

   3rd screen: PCLP VariationSet
   4th screen: PCLP LoopRemix
   5th screen: PCLP Normalize
   6th screen: PCLP FreqConvert (Frequency Convert)
   7th screen: PCLP Extract

PCLP Status

At this screen, you can check the amount of free memory (DRAM) for Phrase Clips and the amount of free memory left on the Memory Card. These factors govern the size/number of Phrase Clips that can be opened/recorded, as well as whether or not the currently selected Clip Kit can be saved to Memory Card. This screen has no adjustable parameters.

```
PCLP Status)  Free  Used          CardFree
              1.1MB 2.9MB(70%)-x→  1.8MB
```

■ **Free**
Shows the amount of free memory (DRAM) for Phrase Clips.

■ **Used**
Shows the amount of memory used by Phrase Clips and Clip Kits if you store them in Memory Card.

■ **CardFree**
Shows the amount of free memory on the Memory Card.

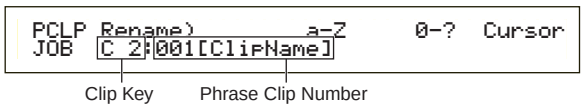
NOTE If the [-x→] indicator is displayed to the right of the Used parameter, this means that the amount of used memory exceeds the free space available on the Memory Card.

PCLP Rename

You can change the Phrase Clip Name for each Phrase Clip. A Phrase Clip Name can consist of up to eight characters. To select each Phrase Clip, use Knob [A] to select the Clip Key and use Knob [B] to select the Phrase Clip Number.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.

The Name is set in the same way as the Voice Name. Details are given on Page 80.
After the Name has been entered, press the [ENTER] key to apply it.



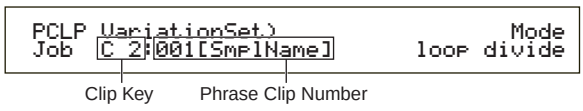
NOTE After recording a Phrase Clip, you have it named automatically.

PCLP VariationSet

You can set a Variation Set for each Phrase Clip. A Variation Set is a collection of up to eight different playback methods for the Phrase Clip. These offer further variations in to the Start, Loop and End Points (Page 149) set in Phrase Clip Edit Mode. Select the target Phrase Clip and set the Variation Mode.

To select each Phrase Clip, use Knob [A] to select the Clip Key and Knob [B] to select the Phrase Clip Number.
After selecting the Phrase Clip, set the Mode and press the [ENTER] key to enter the Mode settings screen.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.



■ Clip Key

Set the Clip Key of the Phrase Clip on which you wish to perform the Job.

❑ **Settings:** C0 ~ C6

■ Phrase Clip Number

Set the Phrase Clip on which you wish to perform the Job.

❑ **Settings:** 1 ~ 256

■ Mode

Select the Variation Mode. There are four Modes available (explained later).

❑ **Settings:** loop divide, auto, realtime, manual

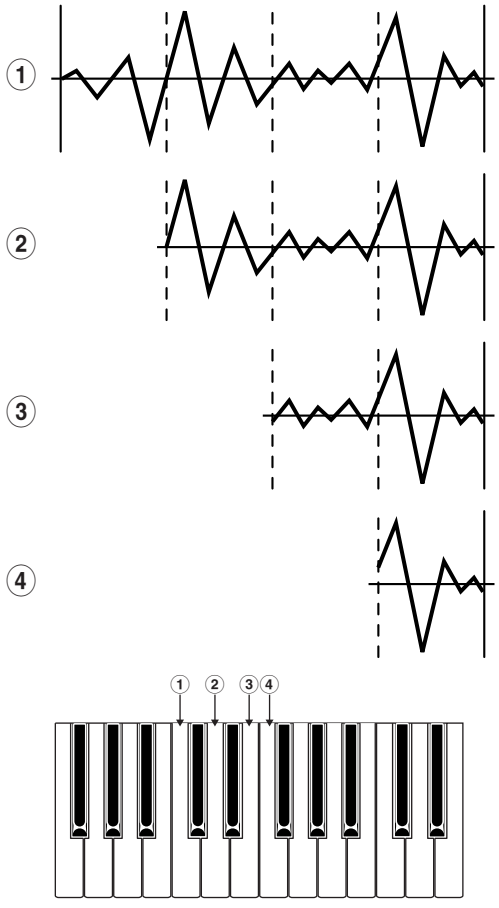
NOTE The following Jobs are available only when the Phrase Clip has been recorded in 16-bit format.

PCLP LoopDivide

For each Phrase Clip, you can set the Variation length as a percentage. The Phrase Clip can be divided into a number of equal-sized sections which make up a Variation Set. These sections can then be assigned to consecutive notes on the keyboard. This is particularly useful when, for example, splitting up a four-bar breakbeat pattern into four one-bar sections, which you can then play back in whichever order you choose.

At this screen, you can press the white notes on the keyboard between C3 and C4 to select Variation Sets 1 to 8, then set its parameters. Press the [ENTER] key to execute the Job.

Example: A loop divided into 4 divisions (Division: 1/4) as each division is played back to the end of the loop (Length: toEnd)



■ Division

Set the number of Phrase Clip sections. The area between the Loop and End Points of the Phrase Clip will be separated into equal-sized sections of the size set here. The Points of each of these sections will be used as the Start, Loop and End Points of each Variation.

❑ **Settings:** 1/2 ~ 1/8

■ Length

Set the Variation length ratio. You can change the length of all the equal-sized sections by the amount set here. If you select "toEnd," the End Point of the source Phrase Clip will be used as the End Point of the Variation (after it has been divided).

❑ **Settings:** toEnd, 10 ~ 800 %

NOTE If this setting is outside the End Point of the Phrase Clip, it will be automatically limited to the End Point setting.

PCLP VarAuto (Variation Auto-set)

The Start Point of the Variation is assigned automatically. The Loop and End Points are the same as those set in the original Phrase Clip.

NOTE There may be cases that automatic setting is not available when the Clip has a narrow dynamic range (no big difference between loudest and smallest volume levels) because of the entire recorded level is too low, etc.

At this screen, Variation Set 1 to 8 are assigned to each of the white notes of the keyboard in the range C3 to C4. Press each note to switch to the respective Variation Set, then set each Set's parameters. Finally, press the [ENTER] key to execute the Job.

NOTE If you are not satisfied with the result, try repeating the process as you may get different results.

```
PCLP VarAuto)          Threshold  Adjust
Job  C 2:001[SmplName]       255    -255
```

■ Threshold

Set the threshold level at which the Auto-set process is started.
The Start Point is automatically set when the average level of the Phrase Clip reaches or exceeds this value.

❑ **Settings:** 0 ~ 255

■ Adjust

Set the amount by which the automatically-set Start Point is adjusted (moved forward).

❑ **Settings:** -255 ~ 0

NOTE If the automatic setting is incorrect, Variation Set 1 will be set such that the entire length of the Phrase Clip will be played back. In this case the Start, Loop and End Points for Variation Sets 2 to 8 will be set to zero.

PCLP VarRealTime (Variation Real-time)

You can set the Start Point of the Variation in real-time while listening to the Loop. The Loop and End Points remain in the same positions as set for the Phrase Clip. The procedure is as follows.

```
PCLP VarRealTime)    Hit[C3-C4]  [EXIT]
Job  C 2:001[SmplName] toVar1-8  toStop
```

❶ At this screen, you can play back the currently selected Phrase Clip as a loop.

❷ Set the Start Points for Variations 1 to 8 by pressing notes C3 to C4 on the keyboard.
By pressing the white notes (C3 to C4) on the keyboard corresponding to Variation Sets 1 to 8, you can set the Start Point while listening to the sound.

❸ In the same way, press the notes when setting the Start Points for the other Variation Sets.

❹ When you press the [EXIT] key, you will see the confirmation message. At this screen, you can verify by playing Variation Sets 1 to 8 by pressing the white notes on the keyboard between C3 and C4.

❺ Press the [INC/YES] key to set each Variation, or press the [DEC/NO] key to cancel the operation and return the Variation to its original state.

PCLP Var (Variation Manual)

You can change the settings for the Variation of the currently selected Phrase Clip. Use Knob [A] to select from Variation Sets 1 to 8 and use Knobs [B], [C], [1] and [2] to set its parameters. Then press the [ENTER] key to execute the Job.
At this screen, the white notes on the keyboard between C3 and C4 can be used to select and play Variation Sets 1 to 8.

```
PCLP Var)  Play    Start     Loop      End
 Var=1: oneshot 2097150 2097150 2097150
```

■ Var (Variation Number)

Select the Variation you wish to set. The settings for the selected Variation will be reflected in all parameters.

❑ **Settings:** 1 ~ 8

■ Play (Play Mode)

Select the Phrase Clip playback mode. There are three modes.

❑ **Settings:**

loop:
When you press a note on the keyboard, the Phrase Clip is played completely from its Start Point. Then its looped section is played back repetitively until you release the note.

oneshot:
When you press a note on the keyboard, the Phrase Clip is played just once from its Start Point to its End Point (not looped).

reverse:
When you press a note on the keyboard, the Phrase Clip is played in reverse, just once, from its End Point to its Start Point (not looped).

NOTE Basic details about each mode are given on Page 54.

■ Start (Start Point)

Set the Start Point from which the Phrase Clip will be played back. By finely adjusting the Start Point, you can avoid playback of the noise before the Start Point. This setting, however, does not eliminate the noise in the original Clip.

❑ **Settings:** Depends on the length of the Phrase Clip.

■ Loop (Loop Point)

Set the starting point of the looped section. With a violin sound, for example, the Loop Point should be set after the distinctive attack portion and at the start of the sustained section of the sound. When playing back this loop, the attack portion of the violin sound is played back, followed by the looped section corresponding with the sustained section of the violin sound (between the Loop Point and the End Point). On the other hand, if the sound does not have a distinctive attack portion, the Loop Point can be set to the same position as the Start Point.

❑ **Settings:** Depends on the length of the Phrase Clip.

■ End (End Point)

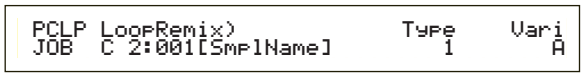
Set the End Point of the Phrase Clip's looped section. This can also be useful for removing unwanted noise at the end of the Phrase Clip.

❑ **Settings:** Depends on the length of the Phrase Clip.

NOTE Details about the Start, Loop and End Points are given on Page 150.

PCLP LoopRemix

The Phrase Clip data can be edited and a new Phrase Clip can be automatically created with a new Loop. The procedure is as follows.



NOTE The following Jobs are available only when the Phrase Clip has been recorded in 16-bit format.

❶ Select the Phrase Clip by using Knob [A] to select the target Clip Key or Knob [B] to set the Phrase Clip Number.

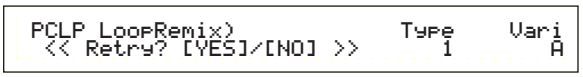
NOTE You can also select the target Clip Key directly by pressing its note on the keyboard.

❷ Select the Type parameter which specifies the section of the Loop to be changed. Five Types are available.

❸ Select the Vari (Variation) parameter, which is the degree of change to be applied to the Loop. Four Variations (A to D) are available, each offering increasing degrees of change.

❹ When you press the [ENTER] key, you will see a confirmation message. Press the [INC/YES] key to execute the Loop Remix Job. The Job will be canceled if you press the [DEC/NO] key.

❺ After executing the Loop Remix Job, you will see the following Retry message.



At this screen, you can use the keyboard to audition the Loop Remix. If you are not satisfied with the result, try creating another Loop Remix by repeating steps ❷ to ❹ but using different Variation settings.

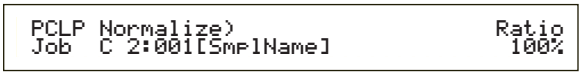
❻ When you are satisfied with the result, press the [DEC/NO] key. A new Phrase Clip will be created and you will be returned to the first screen.

PCLP Normalize

You can normalize each Phrase Clip. This maximizes the output level of the recorded Phrase Clip without causing distortion.

To select each Phrase Clip, use Knob [A] to select the Clip Key or Knob [B] to select the Phrase Clip Number. After selecting the Phrase Clip, set the Ratio parameter and press the [ENTER] key to normalize.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.



■ Clip Key

Select the Clip Key of the target Phrase Clip.

❑ **Settings:** C0 ~ C6

■ Clip Number

Select the target Phrase Clip.

❑ **Settings:** 1 ~ 256

■ Ratio

Set an amplitude ratio in normalization of a volume level. With a value of "100" (%), a peak level will be normalized into full 16 bits, which means there is virtually no distortion in resulting levels. If the volume level in an original Clip is extremely low, set a value less than "100" (%) for a waveform smoother in level changes. You can set a value more than "100" (%) for an intentionally distorted sound.

❑ **Settings:** 0 ~ 200 %

NOTE Once you perform this operation on a Phrase Clip, its original data will be overwritten and you will not be able to undo the changes. Important data should always be backed up or copied to a separate Phrase Clip Number before performing this operation.

PCLP FreqConvert (Frequency Convert)

You can perform a Frequency Convert operation on each Phrase Clip. This halves its sampling rate and therefore its size.

To select each Phrase Clip, use Knob [A] to select the Clip Key or Knob [B] to select the Phrase Clip Number. After selecting the Phrase Clip, press the [ENTER] key to execute the Frequency Convert operation.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.

```
PCLP FreqConvert)
Job  C 2:001[SmplName]
```

■ Clip Key

Select the Clip Key of the target Phrase Clip.

❑ **Settings:** C0 ~ C6

■ Clip Number

Select the target Phrase Clip.

❑ **Settings:** 1 ~ 256

NOTE Once you perform this operation on a Phrase Clip, its original data will be overwritten and you will not be able to undo the changes. Important data should always be backed up or copied to a separate Phrase Clip Number before performing this operation.

PCLP Extract

You can perform an Extract operation on each Phrase Clip. This removes unused sections of the Phrase Clip (sections which are not used in Variations).

To select each Phrase Clip, use Knob [A] to select the Clip Key or Knob [B] to select the Phrase Clip Number. After selecting the Phrase Clip, press the [ENTER] key to execute the Extract operation.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.

```
PCLP Extract)                    TargetVari
Job  C 2:001[SmplName]                all
```

■ Clip Key

Select the Clip Key of the target Phrase Clip.

❑ **Settings:** C0 ~ C6

■ Clip Number

Select the target Phrase Clip.

❑ **Settings:** 1 ~ 256

NOTE Once you perform this operation on a Phrase Clip, its original data will be overwritten and you will not be able to undo the changes. Important data should always be backed up or saved to a separate Phrase Clip Number before performing this operation.

■ TargetVari (Target Variation)

Set the areas to be removed by PCLP Extract.

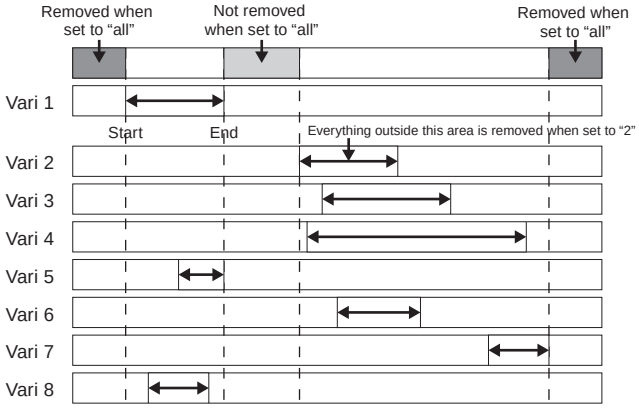
❑ **Settings:**

all

Unused areas of all eight Variations are removed.

1 ~ 8

Unused areas of the Variation specified here are removed.



NOTE When set to "all," the Start End points of all Variations are compared. Then the areas before the Start point and after the End point are removed.

PCLP Delete

You can delete the data of each Phrase Clip individually, or all Phrase Clips simultaneously.

To select each Phrase Clip, use Knob [A] to select Clip Key or Knob [B] to select the Phrase Clip Number. After selecting the Phrase Clip, press the [ENTER] key to delete it.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.

```
PCLP Delete)
Job  C 2:001[SmplName]
```

■ Clip Key

Set the Clip Key that is assigned with a target Clip for this Job. Or, you have other options for maintenance purpose. If you want to delete all (up to 256) Clips that have been recorded, regardless of their assignments in Clip Kits, select "all." When deleting all Clips that are NOT assigned to any Clip Key from any Clip Kit, select "unused."

❑ **Settings:** C0 ~ C6, unused, all

NOTE If you select "unused" or "all," you will see "---" displayed for the Clip Key parameter.

NOTE If you delete a Phrase Clip used in other Clip Kits or Clip Keys, you will never be able to use those Clip Kits or Clip Keys.

■ Clip Number

Set the Phrase Clip you wish to delete.

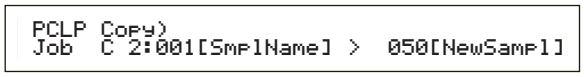
❑ **Settings:** 1 ~ 256

PCLP Copy

You can copy the data of each Phrase Clip to another Phrase Clip.

To select each Phrase Clip, use Knob [A] to select Clip Key or Knob [B] to select the Phrase Clip Number. After selecting the Phrase Clip, press the [ENTER] key to copy it to an automatically allocated (vacant) Phrase Clip Number.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.



■ Clip Key

Select the Clip Key of the Phrase Clip to be copied.

❑ **Settings:** C0 ~ C6

■ Clip Number

Select the Phrase Clip to be copied.

❑ **Settings:** 1 ~ 256

PCLP SampleRcv (Sample Receive)

You can receive Phrase Clip (sample) data from external MIDI devices, such as samplers and computers, using the MIDI Sample Dump Standard.

NOTE The Device Number must be set correctly in order to perform this operation. Details are given on Page 166.

Select the sample you wish to receive, select the Clip Key to which it will be assigned, then press the [ENTER] key to start the Sample Receive process. The received sample will be assigned to the specified Clip Key of the current Clip Kit.

■ ReqSmpl (Request Sample)

Set the sample data to be received from an external MIDI device.

❑ **Settings:** 1 ~ 16384

NOTE This setting is not necessary when you directly send sample data from an external MIDI device to the instrument (without requesting it using this parameter).

NOTE You can only receive mono samples recorded at 44.1 kHz in 16-bit (linear) format.

■ Key (Clip Key)

Select the Clip Key to which the sample will be assigned.

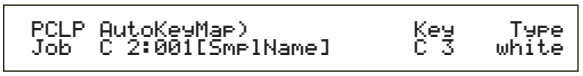
❑ **Settings:** C0 ~ C6

PCLP AutoKeyMap

Auto Key Map is used to automatically assign Variations of a Phrase Clip to notes on the keyboard, starting at the Clip Key note.

To select the Phrase Clip of the Variations, use Knob [A] to select the Clip Key or Knob [B] to select the Phrase Clip Number.
After selecting the Phrase Clip, set the Clip Key and Type parameters, then press the [ENTER] key to execute the Auto Key Map operation.

NOTE You can also select the Clip Key directly by pressing a note on the keyboard.



■ Clip Key

Set the Clip Key assigned to the Phrase Clip of the source Variation.

❑ **Settings:** C0 ~ C6

■ Clip Number

Set the Phrase Clip of the source Variation.

❑ **Settings:** 1 ~ 256

■ Key

Set the first Clip Key to be assigned. Assignments will be made from this note upwards when you perform the Auto Key Map operation.

❑ **Settings:** C0 ~ C6

■ Type

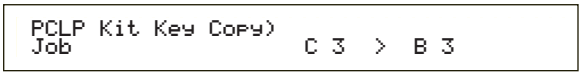
Set the Type. If you select "white," the assignments will be applied only to white notes upwards from the note set in the "Key" parameter. If you select "all," the assignments will be applied to both black and white notes upwards from that point.

❑ **Settings:** white, all

PCLP Kit Key Copy

You can copy Clip key data from one Clip key to another.

After selecting the source and destination Clip key, press the [ENTER] key.



■ Source Clip Key

Select the Clip Key to be copied.

❑ **Settings:** C0 ~ C6

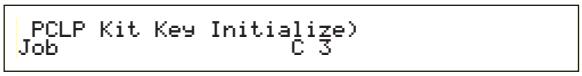
■ **Destination Clip Key**
Select the Clip Key to which the Source Clip Key will be copied.

❑ **Settings:** C0 ~ C6

PCLP Kit Key Initialize

You can initialize each Clip Key to return it to its default state. This is useful when creating a new Phrase Clip from scratch before editing.

After selecting the Clip Key you wish to initialize, press the [ENTER] key.



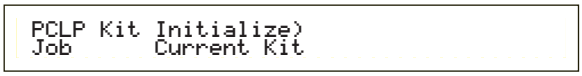
■ **Clip Key**
Select the Clip Key you wish to initialize.

❑ **Settings:** C0 ~ C6

PCLP Kit Initialize

You can initialize each Clip Kit to return it to its default state. This is useful when creating a new Phrase Clip from scratch before editing. You can initialize the current Clip Kit, or all Clip Kits simultaneously.

After selecting the Clip Kit you wish to initialize, press the [ENTER] key.



■ **Clip Kit**
Set the Clip Kit you wish to initialize.

❑ **Settings:** Current Kit, All kit

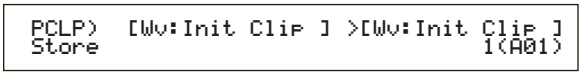
Clip Kit Store

You can store up to four edited Clip Kits to internal memory as follows.

NOTE Existing Clip Kit data will be overwritten with the new data when stored. You should save important data to Memory Card beforehand.

NOTE Clip Kit data stored in internal memory will be lost when you switch the synthesizer off. You should save important Clip Kit and Phrase Clip data to Memory Card before switching the power off. This operation is performed in Card Mode. Details are given on Page 173.

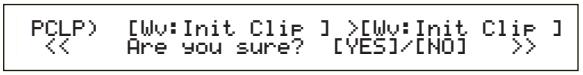
❶ Press the [STORE] key after editing a Clip Kit. The Clip Kit Store screen will be displayed.



❷ Use Knob [2] to select the location Clip Kit Number (1 to 4) at which to store the Clip Kit. The Clip Kit Number will be displayed.

NOTE You can also use the [DATA] knob and the [INC/YES] and [DEC/NO] keys to select the Store location.

❸ Press the [ENTER] key. You will see a confirmation message.



❹ Press the [INC/YES] key to Store. The "Executing..." message will be displayed, followed by the "Completed." message on completion. You will then be returned to Phrase Clip Play Mode.

NOTE Press the [DEC/NO] key to cancel the Store operation and return to the previous screen.

Sequence Play Mode

In this Mode, you can play back the built-in demo songs and Song files stored on Memory Card. Up to 100 Song files can be played back end-to-end by using the Chain Step feature. This Chain Step data can also be saved to Memory Card.

NOTE A Memory Card containing Song files must already be slotted in the Card Slot.

NOTE Basic details about the sequencer are given on Page 31.

When you enter Sequence Play Mode, you will see the 1st screen (Demo Song). The following two screens are available.

1st screen: SEQ Demo (Sequence Demo)
2nd screen: SEQ (Sequence Chain)

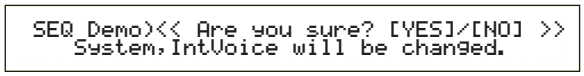
NOTE If you load Sequence Chain data in Card Mode (Page 174) or using the Auto Loading feature (Page 172), the 2nd screen will be displayed first.

NOTE Details about how to enter Sequence Play Mode are given on Page 22.

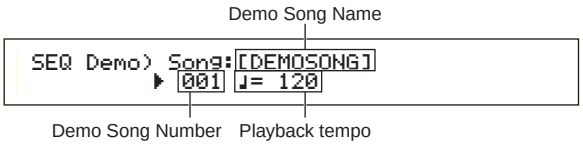
SEQ Demo (Sequence Demo)

The Demo Song data is contained in internal memory.

When you attempt to enter the SEQ Demo (Sequence Demo) screen, you will have an alert screen shown below, since you lose your data for System, internal Voices and Phrase Clip by loading the demo song.



Press the [YES] key to accept the alert and proceed to the SEQ Demo screen. You can play the demo song in this screen.



■ Playback Tempo

❑ **Settings:** *** (default tempo), 25 ~ 300

❶Use Knob [B] and the [ENTER] key to select the Demo Song Number.

❷Set the tempo (if necessary).

NOTE The Demo Songs contain preset tempos by default. When you switch to another Demo Song, its preset tempo will be used. You can change the playback tempo. To restore the default tempo, select "***" as the tempo setting.

❸Press the [PLAY/STOP] key to play back the selected Demo Song from the beginning.

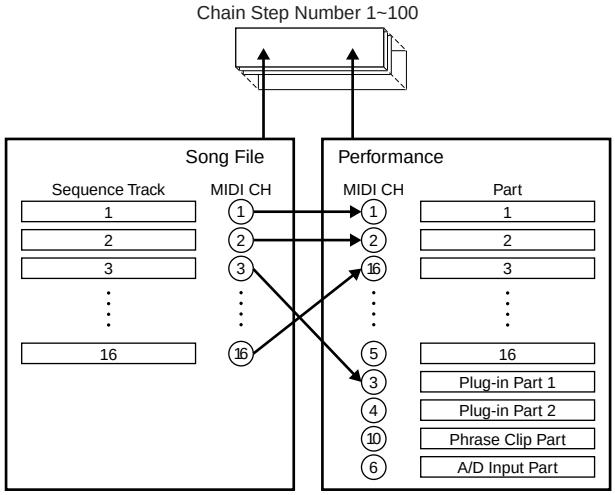
❹Press the [PLAY/STOP] key again to stop the Demo Song playback.

NOTE If you press the [PLAY/STOP] key once again, playback will resume from the current position.

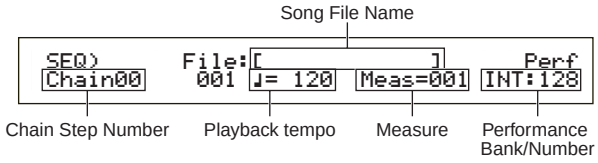
NOTE Demo Songs will playback continuously until stopped.

SEQ (Sequence Chain)

You can set up to 100 Steps in a Chain here. Each Chain Step is assigned a Song file and a Performance (Voices for each Part used in the Song). You can play back one particular Chain Step or multiple Chain Steps end-to-end.



NOTE Chain settings can be saved to Memory Card.



■ Chain Step Number

Change each Chain Step. If you choose a Step Number here, the screen for the selected Chain Step will be displayed.

❑ **Settings:** 00 ~ 99

NOTE You can jump to the next Chain Step screen and change the Chain settings in advance, even while a Song is being played back.

NOTE A "P" indicator is displayed to the right of the Chain Step Number at the Chain Step screen of the Song file currently being played back.

■ Song File Number

Assign a Song file to the Chain Step. Any Song files with the ".MID" extension can be selected. When you select a file Number here, the file name is shown in the top line of the display.

For continuous (chained) playback of multiple Chain Steps, you can specify how to play this Chain Step after playback of a previous one by selecting an option from among "skip," "end" and "stop."

If you select "skip," the Chain Step is skipped and playback will jump to the next Chain Step. If you choose to skip the 99th Chain Step, playback will jump back to the first Chain Step after the 98th Chain Step.

If you select "end," when the Song reaches this Chain Step, chained playback is stopped and you are returned to the first Chain Step.

If you select "stop," the Song stops when it reaches this Chain Step. When the Song playback is resumed, it starts at the next Chain Step.

❑ **Settings:** skip, end, stop, 001 ~ 997

■ Playback Tempo

Set the playback tempo of the Chain Step. When you start playback of the song, it is normal that a tempo value contained in the song file is automatically set to this parameter. If necessary, you can change the playback tempo here. To restore the Song's own playback tempo, select "***."

❑ **Settings:** *** (default tempo), 25 ~ 300

NOTE When playing back a Song file using its own tempo data, the tempo setting is shown in brackets. These brackets disappear when you change the tempo.

■ Meas (Measure)

The Song measure in the current Chain Step is shown during playback. If you stop playback, you can use Knob [1] to enter a measure number and press the [ENTER] key to resume playback at that measure.

❑ **Settings:** 001 ~ 999

■ Performance Bank/Number

Set the Performance (Bank/Program Number) to be used in the Chain Step. The Voices of each Part in the selected Performance will be used when playing back the Song file.

Use Knob [2], the MEMORY [INT]/[EXT] keys, BANK keys [A] to [H] and PROGRAM keys [1] to [16] to select the Memory Bank and Program Number of the Performance.

❑ **Settings:** *** (not set), INT/EXT (Bank), 1 ~ 128 (Program Number)

NOTE If no Performance changes are contained within a Song file, "***" is displayed as the Bank/Number when the Song File is selected. In this case, the Song file will use the Program set in the currently selected Mode (Voice Mode/Performance Mode/Phrase Clip Mode).

NOTE Performances can be changed while Songs are playing or have been stopped. However, it does not change in real time during playback if you specify a Chain Step other than the current one. In stead, it changes when playback reaches the song at the specified Chain Step.

Song File Playback

1. Use Knob [B] to select the Song file you wish to play back.

   NOTE When playing back a single Song, you do not need to select a Chain Step Number (You can have any Chain Step screen open).

2. Set the tempo (if necessary).
3. Set the starting point (measure) for the Song (if necessary).
4. Select the Performance Bank/Number (if necessary).
5. Press the [PLAY/STOP] key to playback the Song from the set position (or from the beginning).
6. Press the [PLAY/STOP] key again to stop the Song playback.

Chained Playback

1. Use Knob [A] to select the Chain Step Number of the first Song you wish to play back.
2. Set the tempo (if necessary).
3. Set the starting point (measure) for the Song (if necessary).
4. Select the Performance Bank/Number (if necessary).
5. Press the [PLAY/STOP] key to play back the Song from the set position (or from the beginning).

   When the Chain Step playback has finished, the Song of the next Chain Step Number will automatically be started. Songs can be played back continuously this way.

6. Press the [PLAY/STOP] key again to stop the chained playback.

   Also, if an "end" or "stop" Chain Step is reached, playback will stop.

Utility Mode

The parameters in Utility Mode are explained here. Utility Mode can roughly be divided into a screen for settings common to the entire system, a screen for Voice Mode settings and a screen for Plug-in Board settings.

You will first see the following screen when you enter Utility Mode. Each of the three Utility Mode screens contain further sub-screens. Basically the [PAGE] knob is used to switch between parameter screens and Knobs [B], [C] and [1]/[2] are used to set the values for each parameter. You can also use the [DATA] knob or the [DEC/NO] and [INC/YES] keys to enter values.

Sys (System): System settings

```
MSTR TG)     Vol          NoteShift     Tune
Sys          127                +63 +102.3c
```

- Master
- Control
- MIDI

Vce (Voice): Voice Mode settings

```
M.EQ Low) Shape    Gain     Freq         Q
Vce         peak   +12dB    50Hz      12.0
```

- Master Equalizer
- Control

Plg (Plug-in): Plug-in Settings

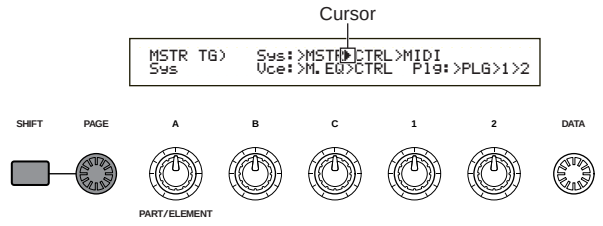
```
PLG  Status)     PLG1:PLG100-VH   Expand
Plugin           PLG2:PLG150-AN     part
```

- Plug-in Board Status
- Plug-in Board 1 System
- Plug-in Board 2 System

NOTE Details about how to enter Utility Mode are given on Page 22.

Menu Display

When you use the [PAGE] knob while holding down the [SHIFT] key, the following menu will be displayed. Use the [PAGE] knob to move the cursor (▶) between items, then release the [SHIFT] key to jump to the selected item.



MSTR (System Master)

You can set the overall parameters, including volume and pitch, which mainly relate to the synthesizer's tone generator section. The following four screens are available.

MSTR TG (Master Tone Generator)
MSTR Kbd (Master Keyboard)
MSTR EF Bypass (Master Effect By-pass)
MSTR Other (Master Other)

MSTR TG (Master Tone Generator)

Set the parameters which control the synthesizer's tone generator section.

```
MSTR TG)     Vol          NoteShift     Tune
Sys          127                +24 +102.3c
```

■ Vol (Master Volume)

Set the synthesizer's overall volume.

❑ **Settings:** 0 ~ 127

■ NoteShift (Master Note Shift)

Set the amount (in semitones) by which the note pitch is shifted. This parameter only affects the synthesizer's internal tone generator. It does not affect information transmitted via MIDI.

❑ **Settings:** -24 ~ 0 ~ +24

■ Tune (Master Tune)

Adjust the keyboard tuning (in 0.1 cent steps).

❑ **Settings:** -102.4 ~ +102.3

MSTR Kbd (Master Keyboard)

Set the parameters related to the keyboard.

```
MSTR Kbd)    Oct Trnspose     Vel
Sys           +3      +11   fixed =   127
```

■ Oct (Master Octave Shift)

Shift the octave range of the keyboard up or down.

❑ **Settings:** -3 ~ 0 ~ +3

■ Trnspose (Master Transpose)

Transpose the pitch of the keyboard up or down (in semitones). This affects information transmitted via MIDI.

❑ **Settings:** -11 ~ +11

NOTE If you transpose beyond the note range limits (C-2 and G8), the notes will be wrapped over.

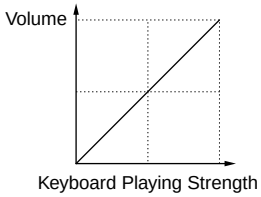
NOTE This parameter is not available in the CS6R.

■ Vel (Keyboard Velocity Curve)

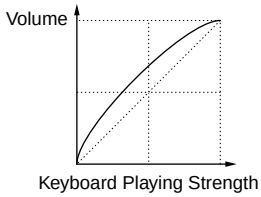
Set the Velocity Curve determining how the strength of the notes played will affect the sound output.

❑ **Settings:** norm, soft, hard, wide, fixed

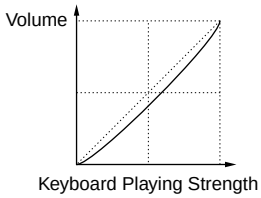
norm (Normal)
The velocity is in proportion to the strength.



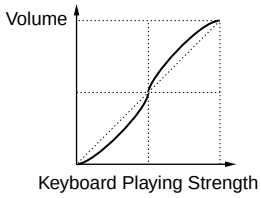
soft
A softer playing style increases the volume level.



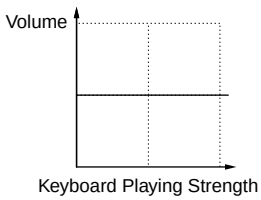
hard
A stronger playing style increases the volume level.



wide
A softer playing style lowers the volume level and a stronger playing style increases the volume level. As a result, you feel a wider dynamic range.



fixed
Select this curve when you want the tone generator to respond (sound) in a specific volume, tone or the like. With this setting, any velocity value will be changed into a fixed one you specify with the Fixed (Keyboard Fixed Velocity) parameter below.



■ Fixed (Keyboard Fixed Velocity)

The velocity is fixed at the Vel setting. The sound output is always the same, regardless of how hard or gently you play the keyboard. The Vel parameter is only available if you select the "fixed" Velocity Curve.

❑ **Settings:** 1 ~ 127 (Only available if Vel is set to "fixed")

MSTR EF Bypass (Master Effect By-pass)

Set the parameters related to the [EF BYPASS] key on the front panel.

```
MSTR EF Bypass)  Insert  Reverb  Chorus
Sys                off       on      on
```

■ Insert (Insertion), Reverb, Chorus

When the [EF BYPASS] key is pressed (its LED is lit), various effects can be bypassed.

❑ **Settings:** off, on (for Insert (Insertion), Reverb and Chorus effects)

NOTE Plug-in Board Variations (Variation Effects) will be bypassed according to the Insert setting.

MSTR Other (Other Setup)

Set other parameters common throughout the system.

```
MSTR Other) PowerOnMode     Ctrl BCCurve
Sys           Voice(INT)    hold    thru
```

■ PowerOnMode

Select the Mode entered when you switch the synthesizer on.

❑ **Settings:**

Performance:
Performance Play Mode is entered and the first Program Number (INT: 001) is selected automatically.

Voice (INT):
Voice Play Mode is entered and the first Program Number of the Internal Memory (INT: 001) is selected automatically.

Voice (PRE1):
Voice Play Mode is entered and the first Program Number of Preset Memory 1 (PRE1: 001) is selected automatically.

last:
The Voice/Performance Program selected before you switched the power off is recalled. However, if you were in Phrase Clip Play Mode before you switched the power off, the previously selected Voice in Voice Mode will be selected automatically.

■ Ctrl (Controller)

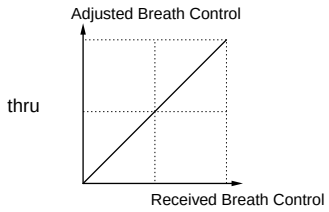
Select whether or not the controller (Modulation Wheel, Aftertouch, Foot Controller, Breath Controller, Ribbon Controller (CS6x), Knobs) state/position is maintained (hold) or reset when you switch between Voices.

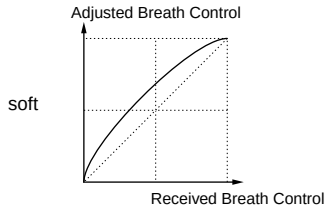
❑ **Settings:** hold, reset
If you select "reset," the controllers will be reset to the following states/positions:
Pitch Bend .....Center
Modulation Wheel .....Minimum
Aftertouch .....Minimum
Foot Controller .....Maximum
Breath Controller .....Maximum
Ribbon Controller .....Center
Foot Switch.....Off
Expression .....Maximum

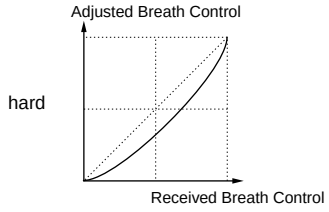
■ BCCurve (TG Breath Curve)

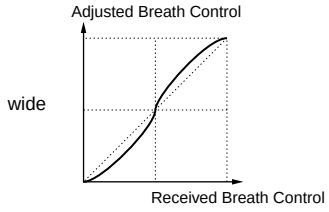
Set the Breath Curve determining how the strength with which you blow into the Breath Controller will affect the sound output.

❑ **Settings:** thru, soft, hard, wide









CTRL (System Controller)

In Voice Mode, you can set parameters for Controllers. The following five screens are available.

CTRL KnobA (Control Knob [A])
CTRL KnobB (Control Knob [B])
CTRL KnobC (Control Knob [C])
CTRL Scene (Control Scene)
CTRL Other (Control Other)

CTRL Knobs [A] to [C]

You can assign various control functions to Assignable Knobs [A] to [C] on the front panel.

```
CTRL KnobA)  CC#                  Dest
Sys          67[--------]         EQLow-G
```

■ CC# (Control Number)

Assign MIDI Control Change Numbers to Assignable Knobs [A] to [C].

❑ **Settings:** 000 ~ 095 (see the separate Data List for details)

■ Dest (Control Destination)

Set the function to be controlled by Assignable Knobs [A] to [C].

❑ **Settings:** see the separate Data List for details

NOTE The positions of Knobs [A]/[B]/[C] can be memorized for each Voice, Performance and Phrase Clip.

NOTE If a Master Equalizer parameter is selected as the destination, the M.EQ settings of "vce" (in Utility Mode) are increased/decreased Using Knobs [A]/[B]/[C].

CTRL Scene (Controller Scene) (CS6x)

Set the SCENE [CONTROL] knob parameters.

```
CTRL Scene)  Scene Control
Sys          65[Porta Sw]
```

■ Scene Control (Scene Control Number)

Assign a MIDI Control Change Number to the SCENE [CONTROL] knob.

❑ **Settings:** 000 ~ 095 (see the separate Data List for details)

CTRL Other (Controller Other)

Set the Foot Switch and Foot Volume parameters.

```
CTRL Other)  FS                   FV
Sys          65[Porta Sw]         volume
```

■ FS (Foot Switch)

Assign a Control Change message to the Foot Switch.

❑ **Settings:** 000 ~ 100 (000/032 = off, 096 = Arp Sw, 097 = Arpeggio Hold, 098 = Sequence PLAY/STOP, 099/100 = Program Change INC/DEC)

NOTE The available settings for the CS6R are 000 to 095.

NOTE Details about Control Numbers and Control Changes are given in the separate Data List.

■ FV (Foot Volume) (CS6x only)

Select whether Foot Volume controls the Main Volume or Expression parameter.

❑ **Settings:** volume (Main Volume), expression

NOTE Details about the Main Volume and Expression parameters are given in the separate Data List.

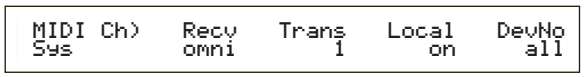
MIDI (System MIDI)

You can set overall MIDI parameters for the system. The following five screens are available.

MIDI Ch (MIDI Channel)
MIDI Arp (MIDI Arpeggio)
MIDI RxSW (MIDI Receive Switch)
MIDI Other
MIDI GM/XG Receive

MIDI Ch (MIDI Channel)

Set the MIDI Channel parameters.



■ **Recv (Basic Receive Channel)**
Set the MIDI Receive channel for using the synthesizer with an external sequencer, computer and so on, and for using it as a MIDI tone generator.

❑ **Settings:** 1 ~ 16, omni (all channels), off

■ **Trans (Keyboard Transmit Channel)**
Set the MIDI Transmit channel for transmitting MIDI from the keyboard, controllers and so on.

❑ **Settings:** Ch1 ~ Ch16, off

■ **Local (Local On/Off)**
If you set Local to "off," the keyboard and controllers are internally disconnected from the synthesizer's tone generator section so that no sound is output when you play the keyboard or use the controllers. However, the data will be transmitted through the MIDI OUT. Also, the tone generator section will respond to messages received at the MIDI IN.

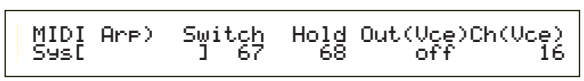
❑ **Settings:** off on,

■ **DevNo (Device Number)**
Set the MIDI Device Number. This number must match the Device Number of the external MIDI device when transmitting/receiving bulk data, parameter changes or other system exclusive messages to/from it.

❑ **Settings:** 1 ~ 16, all, off

MIDI Arp (MIDI Arpeggio)

Set the arpeggiator's MIDI parameters.



■ **Switch**
Select the Control Change Number used to control the ARPEGGIO [ON/OFF] key.

❑ **Settings:** 000 ~ 095 (000, 032 = off)

■ **Hold**
Select the Control Change Number used to control the ARPEGGIO [HOLD] key.

❑ **Settings:** 000 ~ 095 (000/032 = off)

■ **Out (Vce)**
Enable/disable the output or Arpeggiator data to external MIDI devices through the MIDI Out.

❑ **Settings:** off (disabled), on (enabled)

■ **Ch (Vce) (Arpeggio Transmit Channel)**
Select the MIDI channel through which Arpeggio data will be sent.

❑ **Settings:** 1 ~ 16

MIDI Sw (MIDI Receive Switch)

Set the MIDI Receive parameters.

■ **RcvBulk (Receive Bulk)**
Select whether or not Bulk Dump data can be received.

❑ **Settings:** protect (off), on

■ **BankSel (Bank Select)**
Set to enable or disable transmission and reception of Bank Select messages between the instrument and an external MIDI device. With any setting other than "off," the instrument can receive a Bank Select massage coming in, and it can also send a Bank Select massage out to an external MIDI device when you select a Bank using a MEMORY key or the like on its front panel.

❑ **Settings:** off, all, part, perform

off:
Ignores (does not receive) a Bank Select message. The instrument does not send this message, either.

all:
Receives all Bank Select messages coming in. When the instrument receives only a Program Change message in Performance Mode, that message selects a Part's Voice.

part:
Receives only Bank Select messages for selecting a Voice Bank, whichever mode you are working in.

perform:
Receives only Bank Select messages for selecting a Performance Bank when you are working in Performance Mode. When you are working in Voice Mode, the instrument only receives Bank Select messages for selecting a Voice Bank.

■ **PgmChng (Program Change)**
Set to enable or disable reception of a Program Change message coming in. With this parameter set to "on," the instrument can receive a Program Change massage coming in, and it can also send a Program Change out to an external MIDI device when you select a Voice or Performance (using a [PROGRAM/PART] key, etc.) on its front panel.

❑ **Settings:** off (disable), on (enable)

■ **Control**
Set the MIDI transmit/receive parameters for the CS6x's 14 Sound Control knobs.

❑ **Settings:** mode1, mode2
mode1:
If the knob's Control Change message is not a standard MIDI message, it is transmitted as a Parameter Change message instead.

mode2:
The [SUSTAIN] knob transmits a Control Change message.

MIDI Other

Set other MIDI parameters.

```
MIDI Other)  In ThruPort   Sync SeqCtrl
Sys          MIDI     1     int      on
```

■ **In (MIDI Input)**
Select whether to use the MIDI In/Out/Thru connectors or other (future) connectors. At present, you can only select "MIDI."

❑ **Settings:** MIDI

■ **ThruPort**
You can connect your synthesizer to a computer via a dedicated serial cable on the TO HOST connector. In which case, MIDI messages received via the TO HOST connector can be passed through the MIDI OUT connector of the synthesizer. Set the port number here.

❑ **Settings:** 1 ~ 8

■ **Sync**
To synchronize playback with an external MIDI device, you can use either the synthesizer's internal clock (int) or MIDI clock signals from the external device (midi). Select "int" if you are using the synthesizer as the master, or if you have no other MIDI devices connected to it. Select "MIDI" when slaving your synthesizer to another MIDI Clock source connected to the MIDI IN connector.

❑ **Settings:** MIDI, int (internal)

■ **SeqCtrl (Sequencer Control)**
Select whether or not to transmit/receive Song Start, Stop and Continue messages via MIDI. This also switches the transmission of MIDI Clock messages on and off.

❑ **Settings:** off, on

MIDI GM/XG Receive (if a Multi-Part Plug-in Board has been installed)

Set GM On and XG Reset Receive parameters. This screen is only available if a Multi-Part XG Plug-in Board has been installed.

```
MIDI GM/XG Receive)  Sw     InternalPart
Sys                  on       layer-part
```

■ **Sw (Receive Switch)**
Select whether or not to receive GM On and XG Reset messages. The XG Plug-in Board will receive GM On and XG Reset messages if you set this to "on."

❑ **Settings:** off, on

■ **InternalPart**
The sound for each of the synthesizer's Parts can be output in the following three ways. when a GM On/XG Reset message is received. Whichever setting you choose, the Parts of the XG Plug-in Board will always be output.

❑ **Settings:**
all part:
All Parts of the synthesizer and the Plug-in Board will be output when MIDI messages are received.

layer part:
Parts which have their Layer Switch parameters set to "on" and all XG Plug-in Board Parts will be output when MIDI messages are received.

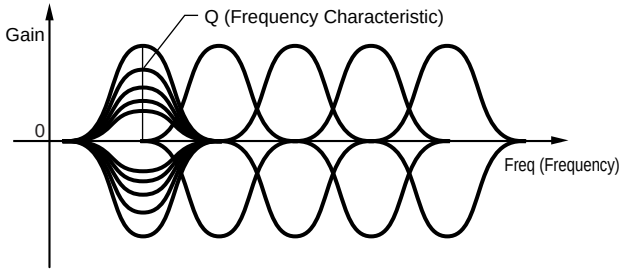
all off:
No Parts of the synthesizer will be output but all XG Plug-in Board Parts will be output when MIDI messages are received.

NOTE By default the Sw parameter is set to "on" and the InternalPart parameter is set to "all off." If you play a song file containing a GM On message, the XG Plug-in Board will be used to play back the song.

M.EQ (Voice Master Equalizer)

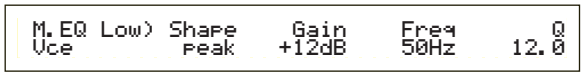
You can assign any of five different Equalizer bands in Voice Mode. The following five screens are available.

M.EQ Low
M.EQ LowMid (Low-Middle)
M.EQ Mid (Middle)
M.EQ HighMid (High-Middle)
M.EQ High



M.EQ Low (Master EQ Low)

This Equalizer covers low frequencies. You can adjust the signal level at the specified frequency. You can also select different Equalizer types (Shapes).



■ **Shape**
Select either a Shelving or Peaking equalizer. The Peaking type attenuates/boosts the signal at the specified Frequency setting, whereas the Shelving type attenuates/boosts the signal at frequencies above or below the specified Frequency setting.

❑ **Settings:** shelv (Shelving), peak (Peaking)

NOTE Details about the shapes of the Shelving and Peaking Types are given on Page 126.

■ **Gain**
Set the Gain. This attenuates or boosts frequencies around the Frequency setting.

❑ **Settings:** -12dB ~ 0dB ~ +12dB

■ **Freq (Frequency)**
Set the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

❑ **Settings:** 32Hz ~ 2.0kHz

■ **Q (Frequency Characteristic)**
This varies the signal level at the Frequency setting to create various frequency curve characteristics.

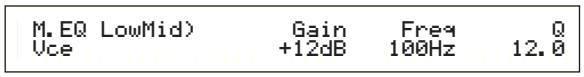
❑ **Settings:** 0.1 ~ 12.0

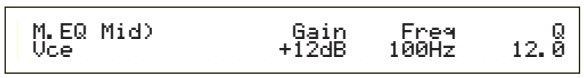
M.EQ LowMid (Master EQ Low-Middle Range)

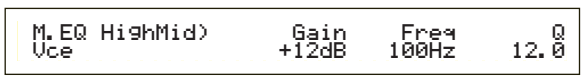
M.EQ Mid (Master EQ Middle Range)

M.EQ HighMid (Master EQ High-Middle Range)

These Equalizers cover low-to-middle, middle and high-to-middle frequency ranges. They can be used to adjust the signal level around the specified frequency.







■ **Gain**
Set the Gain. This attenuates or boosts frequencies around the Frequency setting.

❑ **Settings:** -12dB ~ 0dB ~ +12dB

■ **Freq (Frequency)**
Set the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

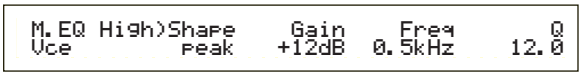
❑ **Settings:** 100Hz ~ 10kHz

■ **Q (Frequency Characteristic)**
This varies the signal level at the Frequency setting to create various frequency curve characteristics.

❑ **Settings:** 0.1 ~ 12.0

M.EQ High (Master EQ High)

This Equalizer covers high frequencies. You can adjust the signal level at the specified frequency. You can also select different Equalizer types (Shapes).



■ **Shape**
Select either a Shelving or Peaking equalizer. The Peaking type attenuates/boosts the signal at the specified Frequency setting, whereas the Shelving type attenuates/boosts the signal at frequencies above or below the specified Frequency setting.

❑ **Settings:** shelv (Shelving), peak (Peaking)

■ **Gain**
Set the Gain. This attenuates or boosts frequencies around the Frequency setting.

❑ **Settings:** -12dB ~ 0dB ~ +12dB

■ **Freq (Frequency)**
Set the center frequency. Frequencies around this point are attenuated/boosted by the Gain setting.

❑ **Settings:** 500Hz ~ 16kHz

■ **Q (Frequency Characteristic)**
This varies the signal level at the Frequency setting to create various frequency curve characteristics.

❑ **Settings:** 0.1 ~ 12.0

CTRL (Voice Controller)

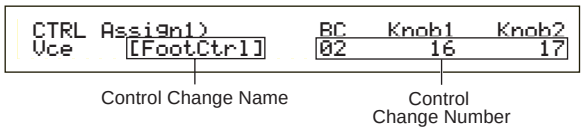
You can assign MIDI Control Change Numbers to the controllers and front panel knobs. For example, Knob [1]/[2] can be set to control the amount of effect applied to a sound and the Foot Controller can be set to control modulation. These Control Change Number assignments are known as “Controller Assign.” The following two screens are available.

CTRL Assign1 (Controller Assign 1)
CTRL Assign2 (Controller Assign 2)

Details about Controller Assign settings in Performance mode are given on Page 126.

CTRL Assign1 (Controller Assign 1)

Use Knobs [C], [1] and [2] to assign Control Change Numbers to the Breath Controller, Knob [1] and Knob [2], respectively. The selected Control Change Name is shown on the left of the display.



■ **BC (Breath Controller)**
Assign Control Change Number to the Breath Controller. The Breath Controller is connected to the BREATH connector (Page 18) on the rear panel. When the Breath Controller is used, this Control Change Number is transmitted. Also, if this Control Change Number is received, the destination parameter of the Breath Controller is controlled.

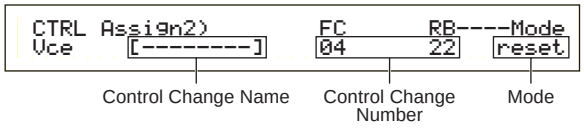
❑ **Settings:** 00 ~ 95 (see the separate Data List for details)

■ **Knob1/2 (Knob [1]/[2])**
Assign Control Change Numbers to Knobs [1] and [2] on the front panel.

❑ **Settings:** 00 ~ 95 (see the separate Data List for details)

CTRL Assign2 (Controller Assign 2)

Use Knobs [C] and [1] to assign Control Change Numbers to the Foot Controller and Ribbon Controller, respectively. The selected function is shown on the left of the display. Use Knob [2] to select the Ribbon Controller Mode.



■ **FC (Foot Controller)**
Assign a Control Change Number to the Foot Controller. The Foot Controller is connected to the FOOT CONTROLLER connector on the rear panel (Page 18).

❑ **Settings:** 00 ~ 95 (see the separate Data List for details)

■ **RB (Ribbon Controller)**
Assign a Control Change Number to the Ribbon Controller on the front panel. The Ribbon Controller's behavior depends on the Mode parameter setting.

❑ **Settings:** 00 ~ 95 (see the separate Data List for details)

NOTE Details about the Ribbon Controller are given on Page 48.

■ **Mode (CS6x only)**
Set the behavior of the Ribbon Controller. If you select "hold," the parameter controlled by the Ribbon Controller will hold its value even after you release it. If you select "reset," the value returns to its default setting at the center of the Ribbon Controller strip.

❑ **Settings:** hold, reset

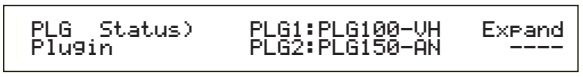
PLG (Plug-in) (if a Plug-in Board has been installed)

If you have a Plug-in Board installed, the following three screens are available for setting its parameters. However, the number of sub-screens and parameters will vary depending on the type of Plug-in Board installed.

PLG Status (Plug-in Status)
PLG1/2 MIDI (Plug-in 1/2 MIDI)
PLG1/2 System (Plug-in 1/2 System)

PLG Status (Plug-in Status)

The name of the Plug-in Board is displayed.



■ **PLG1 (Plug-in 1)**
The name of the Plug-in Board in the Plug-in 1 slot is displayed.

■ **PLG2 (Plug-in 2)**
The name of the Plug-in Board in the Plug-in 2 slot is displayed.

NOTE Nothing is displayed for vacant Plug-in slots.

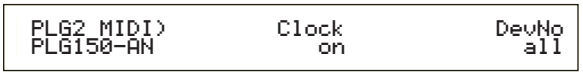
■ **Expand**
This parameter is accessible only when you have two identical Plug-in boards installed on the instrument. The "part" setting enables two boards to work separately (you can select them in two different Parts). The "poly" setting enables two boards to work together to double polyphonic notes (you can only use them in a single Part with double polyphony).

❑ **Settings:** part, poly

PLG1 MIDI (Plug-in 1 MIDI)

PLG2 MIDI (Plug-in 2 MIDI)

Set the MIDI parameters of the Plug-in Board.



■ **Clock**
Select whether or not to transmit MIDI Clock messages to the Plug-in Board.

❑ **Settings:** off, on

■ **DevNo (Device Number)**
Set the MIDI Device Number of the Plug-in Board. This number must match the Device Number of the external MIDI device when transmitting/receiving bulk data, parameter changes or other system exclusive messages to/from it.

❑ **Settings:** 1 ~ 16, all, off

PLG1/2 System (Plug-in 1/2 System)

Set the system parameters for each Plug-in Board. Use Knob [C]/[2] to change the parameter. The number of screens and parameters will vary depending on the type of Plug-in Board installed. In the following example, a PLG150-AN Plug-in Board has been installed in the Plug-in 2 slot.

```
PLG2 System) Vel Curve   Mrph CtrlNo
PLG150-AN         norm          off
```

NOTE The system settings for the PLG100-VH Plug Board (Harmony Channel and Melody Channel) are set in Performance Mode. Select an effect type using knob [1] in the EFF plg screen of Common Effect. Then press the [ENTER] key to enter the settings screen.

NOTE Part Assign (assignment) for a Single-Part Plug-in Board is fixed as follows:
- Voice Mode: 1
- Performance Mode: PLG1:16
  PLG2:15

Synchronize the tempo settings of the CS6x/CS6R and the Plug-in Board.

If you are using a Plug-in Board capable of generating arpeggio patterns, you can synchronize its tempo with that of the CS6x/CS6R.

1. Enter Utility Mode and select either PLG1 MIDI screen or the PLG2 MIDI screen for the respective Plug-in Board. Then use the appropriate knob to set the Clock parameter to "on."
2. Enter Voice Mode, select the Plug-in Voice of the respective Plug-in Memory, then enter Voice Edit Mode.
3. Use knob [A] to select "Elem," as shown at the bottom left of the screen.
4. Use the [PAGE] knob to select the name of the Plug-in Board, as shown at the bottom left of the screen. Then enter the Plug-in native part parameter screen.
5. Use the [PAGE] knob to select the Plug-in native part parameter for the tempo. Then use the appropriate knob to select MIDI (midi).

Now, the tempo of the Plug-in Board is synchronized with the MIDI clock signal received from the CS6x/CS6R.

NOTE To synchronize with an external MIDI clock source, enter Utility Mode and set the Sync parameter of the MIDI Other screen to "MIDI."

Utility Job Mode

In Utility Job Mode, you can restore your synthesizer's factory default settings (Factory Set). There is only one screen in this Mode.

Factory Set (Restore Factory Defaults)

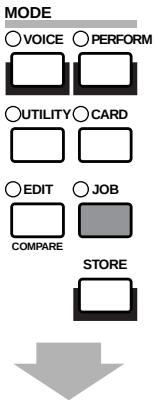
You can restore the synthesizer's default Internal Voices and Performances, as well as its System and other settings.

Once you edit any settings, their factory defaults will be overwritten and lost.

You can restore the factory default settings as follows.

⚠ When you restore the factory default settings, all the current settings for the all the Internal Voices and Performances will be overwritten with the factory defaults. Make sure you are not overwriting any important data. You should back up any important data to Memory Card, or to some external device beforehand.

1. Press the [JOB] key in Utility Mode. You will see the Factory Set screen.




```
UTIL Factory Set)
Job
```

2. When you press the [ENTER] key, you will see a confirmation message.
3. Press the [INC/YES] key to execute the Factory Set job. You will see the "Completed." message displayed after the job has completed. You can cancel a job while it is being executed by pressing the [DEC/NO] key.
4. Press the [EXIT] key to return to Utility Mode.

Card Mode

In Card Mode, you can use Memory Card, a SmartMedia™ card available at a consumer electronics shop, etc., to save or load data from/to the instrument or perform other data exchange operations between memories on the instrument and the Card. Using the included Card Filer software, you can use a computer to manage data on Memory Card. You can also use it to exchange data between the computer and Memory Card.

Handling the Memory Card(SmartMedia™*)

Be sure to handle Memory Cards with care. Follow the important precautions below.

* SmartMedia is a trademark of Toshiba Corporation.

■ Compatible Memory Card Type

3.3V(3V) Memory Cards can be used. 5V type Memory Cards are not compatible with this instrument. A blank 4MB Memory Card has been included in your instrument.

■ Memory Capacity

There are five types of Memory Cards: 2MB/4MB/8MB/16MB/32MB. A Memory Card with the memory capacity exceeding 32MB can also be used if it conforms to the standards of SSFDC (Solid State Memory Card Card: another name of SmartMedia) Forum.

■ Inserting/Removing Memory Cards

- **To insert a Memory Card:**

Hold the Memory Card so that the connector section (gold) of the Memory Card is facing downward and forward, towards the Memory Card slot. Carefully insert the Memory Card into the slot, slowly pushing it all the way in until it is fitted in place.

- Don't insert the Memory Card in wrong direction.

- Don't insert anything other than a Memory Card in the slot.

- **To remove a Memory Card:**

Make sure to turn the instrument off and pull the Memory Card out of the slot.

⚠ Always the instrument must be turned off before removing the Memory Card.

However, if the Memory Card's memory is full and you want to exchange it with a new one to save your currently edited data, follow the following procedure: Before removing the Memory Card, be sure to confirm that the Memory Card is not in use, or it is not being accessed by the instrument. Then pull the Memory Card out slowly by hand. If the Memory Card is being accessed*, a message indicating that it is in use appears on the instrument's display.

* It includes saving, loading, formatting, deleting and making directory. Also, be aware that the instrument will automatically access the Memory Card to check the media type when it is inserted while the instrument is turned on.

⚠ Never attempt to remove the Memory Card or turn the power off during accessing. Doing so can damage the data on the instrument/Memory Card and possibly the Memory Card itself.

■ Formatting Memory Cards

Before using a Memory Card with your instrument it must first be formatted. Once it is formatted all data on it will be erased. Be sure to check if the data is unnecessary for you or not, beforehand.

NOTE The Memory Cards formatted with this instrument may become unusable with other instruments.

■ About the Memory Cards

- **To handle Memory Cards with care:**

There are times when static electricity affects Memory Cards. Before you handle Memory Cards, to reduce the possibility of static electricity, touch the metal parts such as a door knob and aluminum sash.

Be sure to remove the Memory Card from the Memory Card slot when it is not in use for a long time.

Do not expose the Memory Card to direct sunlight, extremely high or low temperatures, or excessive humidity, dust or liquids.

Do not place heavy objects on a Memory Card or bend or apply pressure to the Memory Card in any way.

Do not touch the metal part (gold) of the Memory Card or put any metallic plate onto the metal part.

Do not expose the Memory Card to magnetic fields, such as those produced by televisions, speakers, motors, etc., since magnetic fields can partially or completely erase data on the Memory Card, rendering it unreadable.

Do not attach anything other than the provided labels to a Memory Card. Also make sure that labels are attached in the proper location.

- **To protect your data (Write-protect):**

To prevent inadvertent erasure of important data, stick the write-protect seal (provided in the Memory Card package) onto the designated area (within a circle) of the Memory Card.
Conversely speaking, to save data on the Memory Card, make sure to remove the write-protect seal from the Card. Do not reuse the seal that is peeled off.

■ Data Backup

For maximum data security Yamaha recommends that you keep two copies of important data on separate Memory Cards. This gives you a backup if one Memory Card is lost or damaged.

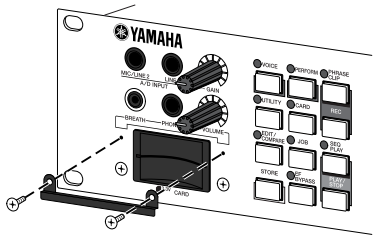
■ Burglarproof Lock

This instrument is equipped with a burglarproof lock for the Memory Card. If necessity arises, mount the burglarproof lock onto the instrument.

To mount the burglarproof lock:

❶ Remove the metallic part using a Phillips screwdriver.
❷ Turn the metallic part upside down and then mount it again.

NOTE The device is not attached to the CS6R initially. Fit it as illustrated below.



You will see the 1st screen (Status) when you enter Card Mode. The following seven screens are available, each for a different operation.

1st screen: Status
2nd screen: Save
3rd screen: Load
4th screen: Rename
5th screen: Delete
6th screen: MkDir (Make Directory)
7th screen: Format

NOTE Details about how to enter Card Mode are given on Page 22.

File Types

You can handle the following eight types of files to your synthesizer.

■ all (All Data)

All data in the synthesizer and in External Memory data are treated as a single file, and can be saved/loaded as such.

❑ **Extension:** ".S2A"

NOTE Plug-in Board data cannot be saved.

NOTE System, Performance and Plug-in voice data can only be saved in this format.

■ all-voice (All Voice Data)

All Voice data in the synthesizer (128 Normal Voices + 2 Drum Voices) and in External Memory (128 Normal Voices + 2 Drum Voices) are treated as a single file, and can be saved/loaded as such. Phrase Clip and Plug-in Voice data are not included.

❑ **Extension:** ".S2V"

■ all-pclip (All Phrase Clip Data)

All Phrase Clip data (4 Clip Kits + up to 256 Phrase Clips) are treated as a single file, and can be saved/loaded as such.

❑ **Extension:** ".S2W"

■ plugin

All Plug-in Board data is treated as a single file, and can be saved/loaded as such. Data for Plug-in Voice settings are not included.

❑ **Extension:** ".S2B"

■ chain (Sequence Chain)

Chain data for Standard MIDI Files (SMFs) are treated as a single file, and can be saved/loaded as such. This data is used for playing back multiple songs in succession.

❑ **Extension:** ".S2C"

■ SMF (Standard MIDI Files)

Format 0 Standard MIDI Files (SMFs) can be played back in Song Mode. However, they cannot be saved.

❑ **Extension:** ".MID"

NOTE The SMF is a standardized sequence file format used by musical instrument manufacturers, computer software companies and other parties. An SMF can easily be exchanged between SMF-compatible sequencers, regardless of the manufacturer. The following two types of SMF exist, though this synthesizer will only play back Format 0 SMFs.

- **Format 0:**
  Data for multiple MIDI channels is contained within a single track.

- **Format 1:**
  Data for multiple MIDI channels is contained within multiple tracks.
  If the SMF you wish to play back is in Format 1, use the included Card Filer software to convert to Format 0 via computer. Details of how to convert SMFs are given in the Card Filer documentation (in PDF format). Details about installing the Card Filer software are given in the separate Installation Guide.

■ WAV (WAV Files)

WAV is an audio file format commonly used by computers. WAV files can be loaded into the synthesizer and used as Phrase Clips.

❑ **Extension:** ".WAV"

■ AIFF (AIFF Files)

AIFF is an audio file format commonly used by computers. AIFF files can be loaded into the synthesizer and used as Phrase Clips.

❑ **Extension:** ".AIF"

Automatically Loading Files

The synthesizer can automatically load certain files (All/Plug-in data) when you switch it on.
Name the file to be loaded automatically as follows, then save it to the highest directory of the Memory Card. Insert the card into the CARD slot before switching the synthesizer on.

NOTE To prevent the automatic loading of files, hold down the [EXIT] key when powering up the synthesizer. Release the key when the "Now checking plug-in board." message is displayed.

■ **All (all data):**
Name the file "AUTOLOAD.S2A" to automatically load all data.

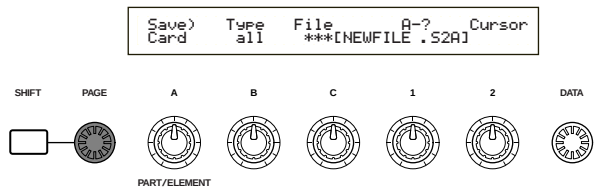
■ **Plugin (Plug-in data):**
Name the file "AUTOLD1.S2B" to automatically load Plug-in 1 Board data, or "AUTOLD2.S2B" for Plug-in 2 Board data.

Card Mode Operations

❶Insert the Memory Card into the CARD slot.

❷Press the [CARD] key to enter Card Mode.

❸Use the [PAGE] knob to switch to the screen for the operation you wish to perform.



NOTE In the first "Status" screen, you don't need any further operation described in step 2 and after.

❹Use Knobs [B], [C], [1] and [2] to set each parameter. Alternatively, you can use the [DATA] knob and the [DEC/NO] and [INC/YES] keys.

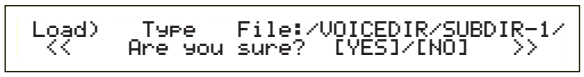
NOTE To save, load, rename or delete a file, use Knob [B] to select the File Type and Knob [C] to select the File Number.

File Directories

Directories are denoted by "DIR" next to the directory name. To open a directory, use Knob [C] to move the cursor to it and press the [ENTER] key. All the files in the directory are displayed. If you select File Number 000, "up dir" will be displayed. By pressing the [ENTER] key, you will be returned to the parent directory (i.e., moved up one directory level).

NOTE When saving or renameing, the directory for the currently selected file is displayed if you press the [SHIFT] key.

❺When you press the [ENTER] key, you will see a confirmation message.



❻Press the [INC/YES] key to execute the operation. The message "Completed." will be displayed after it has executed, and you will be returned to the previous screen.

The operation will be canceled if you press the [DEC/NO] key during execution.

NOTE If the operation takes some time to execute, you will see the message "Executing..." If you switch the power off in this state, the data may be damaged.

NOTE The steps in the procedure may vary slightly, depending on the operation being performed. Refer to the explanation of each operation for details.

Status

You can view the amount of free and used on the Memory Card. There are no settings.

■ Used

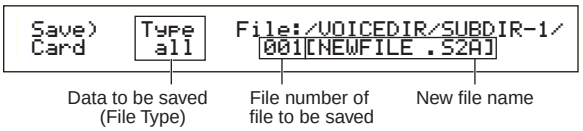
Shows the amount of Memory Card memory used. The amount is shown as a percentage in parentheses.

■ Free

Shows the amount of free memory on the Memory Card.

Save

You can save files to Memory Card as follows.



■ Type (File Type)

❑ **Settings:** all (all data), all-voice, chain (Sequence Chain), plugin1, plugin2, all-pclip (All Phrase Clip),

NOTE Details about each File Type are given on Page 172.

NOTE The Memory Card must be formatted before you can save data to it (Page 176).

❶Use Knob [B] to select the File Type to which the data will be saved.

❷To overwrite an existing file, use Knob [C] to select the File Number.
To save a file with a new name, use Knob [2] to move the cursor. Then use Knob [1] or the [DATA] knob or [DEC/NO] and [INC/YES] keys to enter the new file name (see next Page).

NOTE If you press the [SHIFT] key, the directory for the currently selected file is displayed. Further details are given in the section "Card Mode Operations".

❸Press the [ENTER] key to execute a saving operation. If you attempt to overwrite an existing file by pressing the [ENTER] key, you will see a confirmation message. In this case, go to next step.

❹Press the [INC/YES] key to save the file. The message “Completed.” will be displayed after it has been saved, and you will be returned to the previous screen.
The save operation will be canceled if you press the [DEC/NO] key during execution.

NOTE When saving a file, the “Card full” message will be displayed if the space left on the Memory Card is insufficient. Free up space by deleting unwanted data and so on, then try saving the file again.

NOTE If you enter the name of a file that already exists, you will see the “Overwrite? Are you sure?” confirmation message before saving.

NOTE Take care not to overwrite important data held on Memory Card.

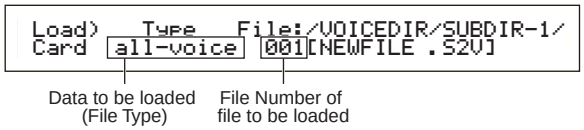
File Name Settings

The procedure for renaming files is basically the same as for renaming Voices. However, you cannot use symbols or lower case characters, and the name can only be up to eight characters in length. Details about renaming Voices are given on Page 80.

NOTE Files are named according to the MS-DOS naming convention. If the file name contains spaces and other characters unrecognized in MS-DOS, these characters will automatically be replaced by “_” (underscore) characters when saving.

Load

You can load files from Memory Card to the synthesizer is as follows.


Load) Type File:/VOICEDIR/SUBDIR-1/
Card all-voice 001[NEWFILE .S2V]
Data to be loaded (File Type)
File Number of file to be loaded

■ Type (File Type)

❑ **Settings:** all (all data), perf (Performance), all-voice, voice, chain (Sequence Chain), plugin1, plugin2, all-pclip (all Phrase Clips), pclip (single Phrase Clip), WAV (WAV files), AIFF (AIFF files).

NOTE The supported WAV/AIFF file formats are as follows.

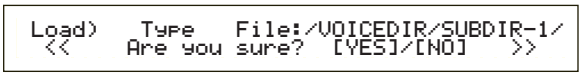
Format	Comments
8bit, linear, mono	
16bit, linear, mono	
12bit, linear, mono	Converted to 16-bit
8bit, linear, stereo	2Phrase Clip created
16bit, linear, stereo	2Phrase Clip created
12bit, linear, stereo	Converted to 16-bit, 2Phrase Clips created

❶Use Knob [B] to select the File Type of the data to be loaded.

❷Use Knob [C] to select the File Number.

❸When you press the [ENTER] key, the following will be displayed, depending on the selected File Type.

- **If you have selected a File Type other than “perf”, “voice” or “pclip”:**
A confirmation message is displayed before loading.



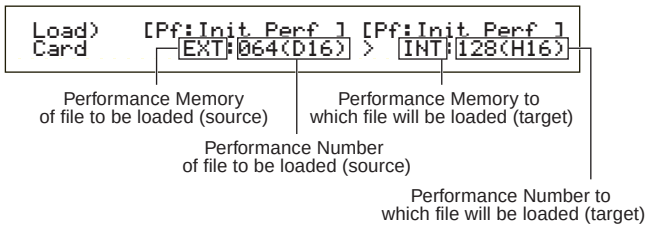
NOTE The synthesizer will automatically select an appropriate location in its internal memory, according to the file type being loaded.

- **If you have selected “perf”, “voice” or “pclip” as the File Type:**
You will further have to specify the type of data and the location to which the file will be loaded.

Use Knobs [B], [C], [1] and [2] to select the file and the location to which it will be loaded.
Alternatively, you can use the [DATA] knob and the [DEC/NO] and [INC/YES] keys.
When you press the [ENTER] key, you will see a confirmation message.

The types of data that you can select for each File Type, and the locations to which they will be loaded, are as follows.

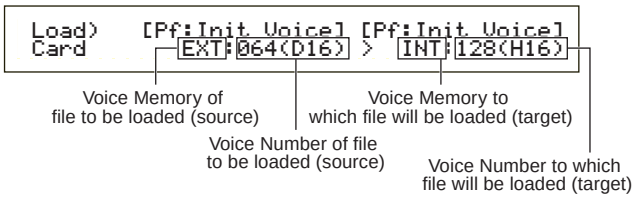
perf (Performance)


Load) [Pf:Init Perf] [Pf:Init Perf]
Card EXT:064(D16) > INT:128(H16)
Performance Memory of file to be loaded (source)
Performance Memory to which file will be loaded (target)
Performance Number of file to be loaded (source)
Performance Number to which file will be loaded (target)

❑ **Settings:**
Source Performance Memory:
INT (Internal), EXT (External)
Source Performance Number:
all (all Performances), 1 ~ 128 (INT), 1 ~ 64 (EXT)
Target Performance Memory:
INT (Internal), EXT (External)
Target Performance Number:
all (all Performances), 1 ~ 128 (INT), 1 ~ 64 (EXT)

NOTE If you set the source Performance Number to “all,” the target Performance Number will also be set to “all.”

voice

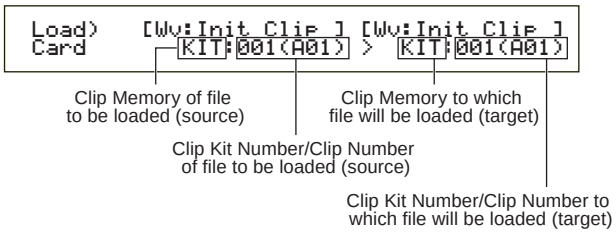

Load)
Card
[Pf:Init Voice]
EXT:064(D16)
[Pf:Init Voice]
INT:128(H16)
Voice Memory of file to be loaded (source)
Voice Number of file to be loaded (source)
Voice Memory to which file will be loaded (target)
Voice Number to which file will be loaded (target)

❑ **Settings:**
Source Voice Memory:
INT (Internal), EXT (External), PLG1 (Plug-in 1), PLG2 (Plug-in 2)
Source Voice Number:
all (all Voices), 1 ~ 128 ~ DR1/2 (INT/EXT), 1 ~ 64 (PLG1/PLG2)
Target Voice Memory:
INT (Internal), EXT (External), PLG1 (Plug-in 1), PLG2 (Plug-in 2)
Target Voice Number:
all (all Voices), 1 ~ 128 ~ DR1/2 (INT/EXT), 1 ~ 64 (PLG1/PLG2)

NOTE If you select PLG1/PLG2 as the source (or target) Voice Memory, the target (or source) Voice Memory will also be set to PLG1/PLG2.

NOTE If you set the source Voice Number to "all," the target Voice Number will also be set to "all."

pclip (Phrase Clip)


Load)
Card
[Wv:Init Clip]
KIT:001(A01)
[Wv:Init Clip]
KIT:001(A01)
Clip Memory of file to be loaded (source)
Clip Kit Number/Clip Number of file to be loaded (source)
Clip Memory to which file will be loaded (target)
Clip Kit Number/Clip Number to which file will be loaded (target)

❑ **Settings:**
Source Clip Memory:
KIT (Clip Kit), CLIP (single Phrase Clip)
Source Clip Kit Number/Clip Number:
1 ~ 4 (KIT)/all (all Clip Kits), 1 ~ 256 (single Phrase Clip)/all (all Clip Kits)
Target Clip Memory:
KIT (Clip Kit), CLIP (single Phrase Clip)
Target Clip Kit Number/Clip Number:
1 ~ 4 (KIT)/all (all Clip Kits), 1 ~ 256 (single Phrase Clip)

NOTE The source and target Clip Memories settings will always be the same.

NOTE If you set the source Clip Number to "all," the target Clip Number will also be set to "all."
If you set it to anything else, the target Clip Number will automatically be assigned the next free number.

NOTE When you select any other than "all" for the source Clip Number, you have the destination Clip Number automatically assigned to an empty Number (where there is nothing stored).

❹ Press the [INC/YES] key to load the file. The message "Completed." will be displayed after it has been loaded, and you will be returned to the previous screen.
The load operation will be canceled if you press the [DEC/NO] key during execution.

NOTE The synthesizer can automatically load files when you switch it on. (You will need to insert the card into the CARD slot before switching the synthesizer on.) Details are given in the section "Automatically Loading Files" (Page 172).

⚠ If there is already data in the synthesizer, it will be completely lost when you load a file.

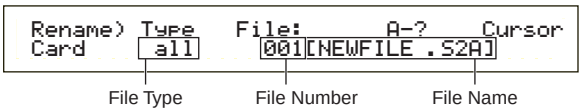
⚠ Take care not to erase important data when performing operations.

NOTE When loading a file, the "Memory full!" message will be displayed if the space left in your synthesizer's internal memory is insufficient. Free up space by deleting unwanted data and so on, then try loading the file again.

NOTE When loading a file, the "File not found!" message will be displayed if the File Type you have selected does not exist on the Memory Card.

Rename

You can rename files using up to eight alphabetic and numeric characters.



■ Type (File Type)

❑ **Settings:** all (all data), all-voice, chain (Sequence Chain), plugin, other, all-pclip (All phrase Clip)

NOTE Details about File Types are given on Page 172.

❶ Use Knob [B] to select the File Type and Knob [C] to select the File Number.

NOTE If you press the [SHIFT] key, the directory for the currently selected file is displayed. Further details are given in the section "Card Mode Operations" (Page 173).

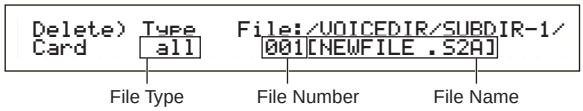
❷ To rename the file, use Knob [2] to move the cursor. Then use Knob [1] or the [DATA] knob and [DEC/NO] and [INC/YES] keys to enter the new file name.
The procedure for renaming files is basically the same as for renaming Voices. However, you cannot use symbols or lower case characters, and the name can only be up to eight characters in length. Details about renaming Voices are given on Page 80.

❸ Press the [ENTER] key to rename the file. The message "Completed." will be displayed after it has been renamed, and you will be returned to the previous screen.

NOTE Files are named according to the MS-DOS naming convention. If the file name contains spaces and other characters unrecognized in MS-DOS, these characters will automatically be replaced by "_" (underscore) characters when saving.

Delete

You can delete files saved on Memory Card.



■ Type (File Type)

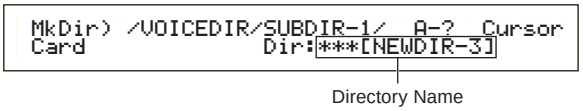
❑ **Settings:** all (all data), all-voice, chain (Sequence Chain), plugin, other, all-pclip (All phrase clip)

NOTE Details about File Types are given on Page 172.

1. Use Knob [B] to select the File Type and Knob [C] to select the File Number.
2. When you press the [ENTER] key, you will see a confirmation message.
3. Press the [INC/YES] key to delete the file. The message "Completed." will be displayed after it has been deleted, and you will be returned to the previous screen.
   The delete operation will be canceled if you press the [DEC/NO] key during execution.

MkDir (Make Directory)

You can create new directories and subdirectories (new directories within existing ones). This allows you to store files in separate directories according to File Type.



NOTE The directory hierarchy can have up to 27 levels.

NOTE You cannot create a directory with the same name as one that already exists.

NOTE The hierarchy display (directory path) will not be shown if the Memory Card has no directory other than the "root" directory.

1. Use Knob [C] to select an existing directory and repeat until you have reached the level in the hierarchy at which you wish to create a new directory.
2. To create a new directory, use Knob [2] to move the cursor. Then use Knob [1] or the [DATA] knob and [DEC/NO] and [INC/YES] keys to enter the new directory name.

   The procedure for renaming files is basically the same as for renaming Voices. However, you cannot use symbols or lower case characters. Details about renaming Voices are given on Page 80. Directory names can only be up to 8 characters long.
3. Press the [ENTER] key to create the directory. The message "Completed" will be displayed after it has been created, and you will be returned to the previous screen.

NOTE Directories are denoted by "Dir" next to the directory name. To open a subdirectory, use Knob [C] to move the cursor to it and press the [ENTER] key. All the files in the subdirectory are displayed. If you select File Number 000, "up dir" will be displayed. By pressing the [ENTER] key, you will be returned to the parent directory (i.e., moved up one directory level).

Format

Before you can use a new Memory Card with the synthesizer, you will need to format it.

Insert a new Memory Card into the CARD slot. When you press the [ENTER] key, you will see a confirmation message. Press the [INC/YES] key to start formatting the Card. You will see the "Executing..." message while the Card is being formatted.

⚠ **If there is already data on the Memory Card, it will be completely lost when you format it.**

⚠ **Do not remove the Memory Card while it is being formatted, since this could result in damage to the synthesizer and the card.**

After formatting, an EXT Memory file will automatically be created. During this process, the message "Now saving..." will be displayed.

About the Plug-in Boards (Optional)

A variety of optional Plug-in boards sold separately let you expand the voice library of your instrument. The following types of Plug-in boards can be used with your instrument.

- **PLG150-AN**
- **PLG150-PF**
- **PLG100-XG**
- **PLG150-VL**
- **PLG150-DX**
- **PLG100-VH**

NOTE See page 32 for detailed explanations for each board.

Available slot (PLG1, PLG2) differs depending on the type of the Plug-in boards. Please take it into consideration before installation.

PLG1/PLG2	Single-part Plug-in Boards (PLG150-AN, PLG150-PF, PLG150-VL, PLG150-DX)
PLG1 only	Effect Plug-in Board (PLG100-VH)
PLG2 only	Multi-part Plug-in Board (PLG100-XG)

NOTE Although the PLG100-VL and PLG100-DX can also be installed, some of the functions are not available.

Precautions When Installing the Optional Boards

Remember the following precautions and install the Plug-in boards properly by following the steps as written.

- Handle the Plug-in boards with care. Dropping or subjecting the Plug-in board to any kind of shock may cause damage or result in a malfunction.
- Be careful of static electricity. There are times when static electricity affects the IC chips on the Plug-in board. Before you lift the optional Plug-in board, to reduce the possibility of static electricity, touch the metal parts other than the painted area or a ground wire on the devices that are grounded.
- Do not touch the exposed metal parts in the circuit board. Touching these parts may result in a faulty contact.
- When moving a cable, be careful not to let it catch on the circuit Plug-in board. Forcing the cable in anyway may cut the cable, cause damage, or result in a malfunction.
- Be careful not to misplace any of the screws since all of them are used.
- Do not use any screws other than what are installed on the instrument.
- When inserting Plug-in boards and connecting cables, make sure that you check that they are inserted and connected properly. Improperly inserted Plug-in boards and cables may cause faulty contacts and an electrical short circuit which may cause damage or result in a malfunction.
- After mounting the Plug-in board be sure to tighten the screws as directed so it is completely stable and does not move in any way.

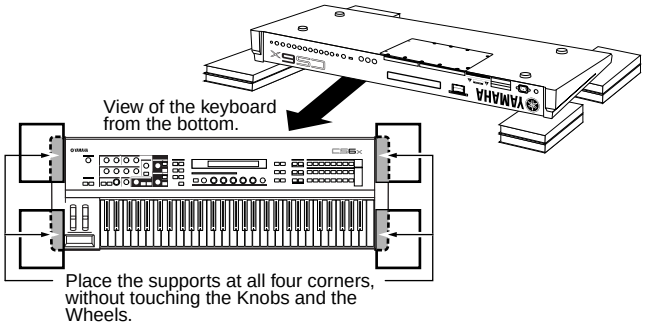
How to Install the Optional Plug-in Board

The installation method is different depending on the instrument types, keyboard (CS6x) and EIA sized module (CS6R). Both methods are explained separately on the following pages. Read the explanation carefully for the instrument that you will use.

Installation in CS6x

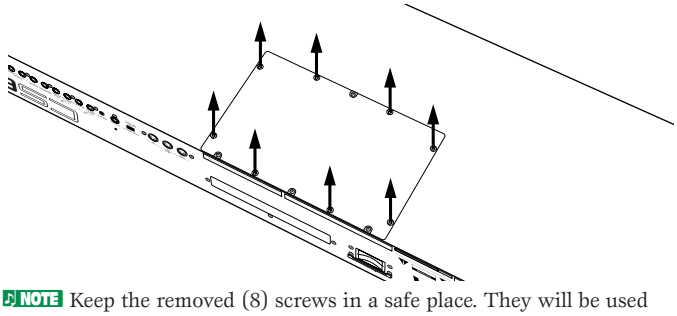
NOTE For information on how to handle the EIA sized module type, go to page 179.

1. Turn the keyboard power off, and disconnect the power cord. Also, if the keyboard is connected with other external device(s), disconnect the device(s).
2. Turn over the keyboard so you can have direct access to the underside. To protect the Knobs and Wheels, place the keyboard so the four corners are supported by something that provides sufficient support like magazines or cushions.



IMPORTANT **Be careful not to drop or bump the keyboard and make sure that it is well balanced before proceeding.**

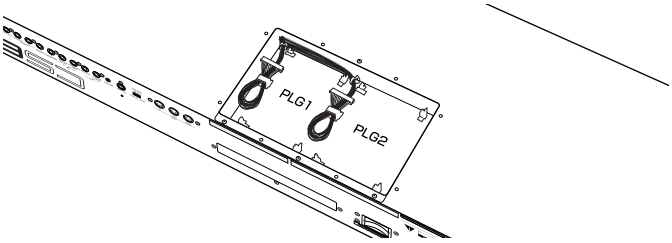
3. Move to a position facing the rear panel of the keyboard, and remove the screws from the Plug-in board cover at the bottom center side with a coin or phillips screwdriver (eight flat-head screws only). Do not remove the other screws.



NOTE Keep the removed (8) screws in a safe place. They will be used when attaching the Plug-in board cover to the keyboard again.

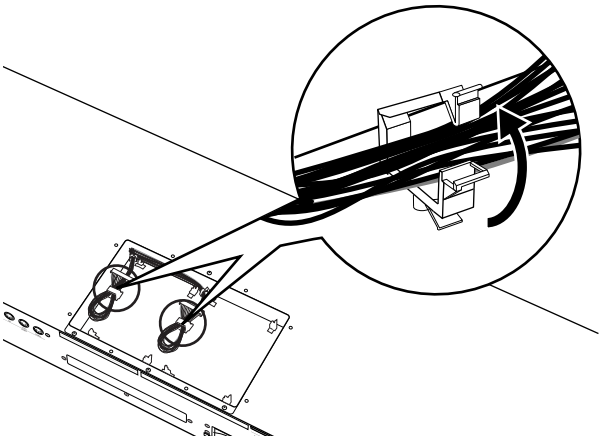
4. Remove the Plug-in board cover.
Plug-in board plate appears. Two Plug-in boards can be accommodated: PLG1 at the left and PLG2 at the right.

IMPORTANT **Available slot (PLG1, PLG2) differs depending on the type of the Plug-in boards. For details, refer to the table above in the left column.**



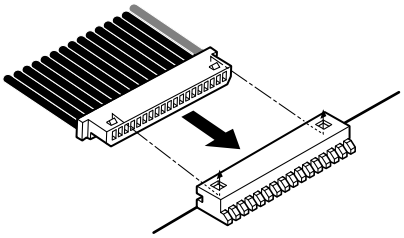
⚠ **When installing the optional Plug-in board (from when you remove the cover to when the cover is replaced securely) all operations must be done with the AC power cord disconnected.**

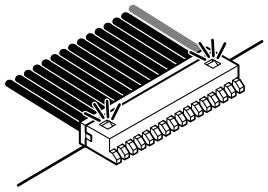
❺ Remove the cable from the hook-shaped bundle tie on the plate.



❻ Take out the Plug-in board from the anti-static bag. When installing the board, the side with a connector and ICs must be on top.

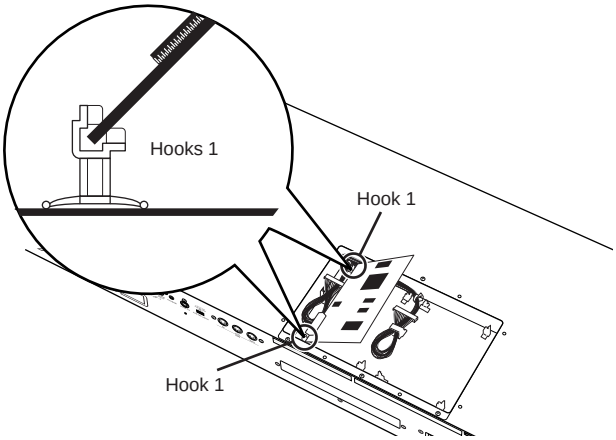
❼ Carefully plug the cable connector into the Plug-in board connector until the two notches on the cable connector lock into the sockets on the board as shown in the illustration.



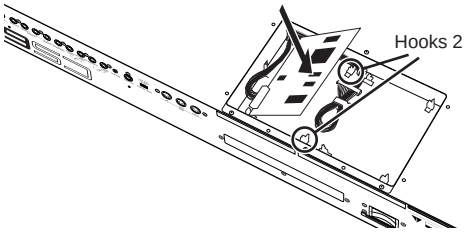


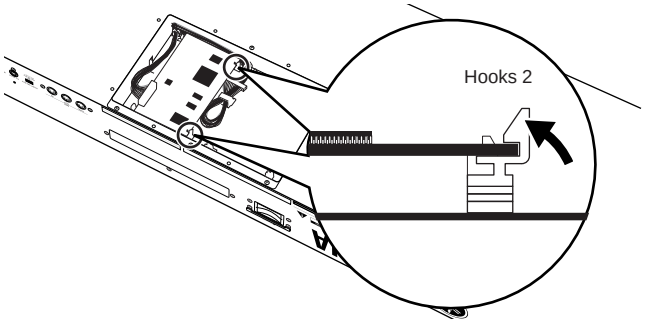
❽ Mount the Plug-in board onto the plate as detailed in the following steps.

❽-1 Insert one side of the Plug-in board (the connector side) into the hooks 1 as shown in the illustration.

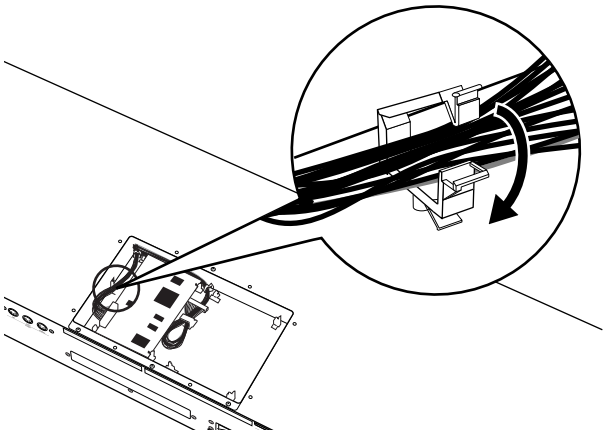


❽-2 Press down the other side until it is securely settled on the hooks 2.





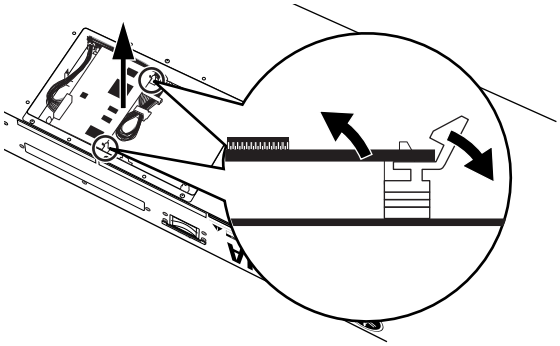
❾ Fix the connector cable to the hook-shaped bundle tie on the plate.



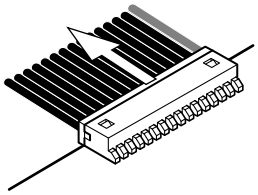
❿ Replace the Plug-in board cover by fastening the eight flat-head screws you removed in the step ❸ above. Use a coin or a Phillips screwdriver to secure the cover.

Removing the Plug-in board from the keyboard

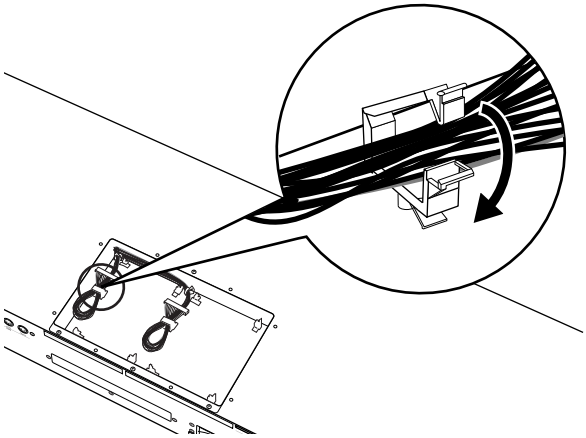
1. Remove the cable from the hook-shaped bundle tie.
2. Press down the hooks 2 in the direction as shown in the illustration and take the board out from the hooks 2 by lifting up the one side.



3. Pull out the other side of the board from the hooks 1.
4. Pull out the cable connector from the Plug-in board connector.



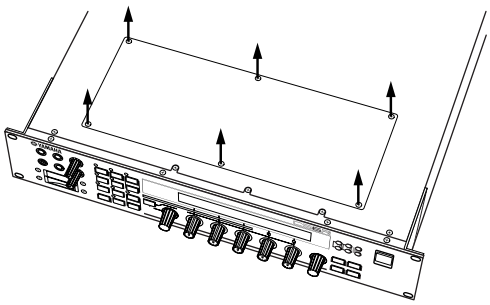
5. Fix the connector cable to the hook-shaped bundle tie.



Installation in CS6R

NOTE For information on how to handle the CS6x, go to page 177.

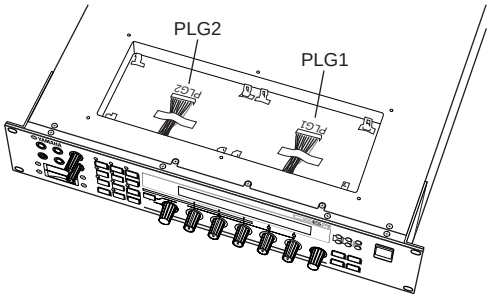
1. Turn the keyboard power off, and disconnect the power cord. Also, if the keyboard is connected with other external device(s), disconnect the device(s).
2. Move to a position facing the front panel of the device, and remove the screws (six flat-head screws) from the Plug-in board cover at the top panel with a coin or a Phillips screwdriver.



NOTE Keep the removed (6) screws in a safe place. They will be used when attaching the Plug-in board cover to the device again.

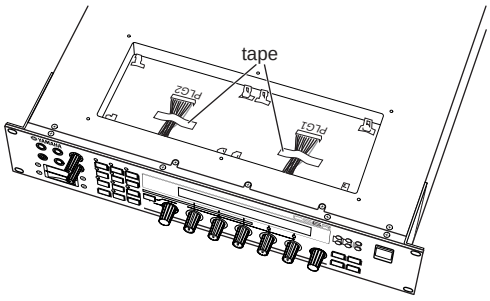
3. Remove the Plug-in board cover.
   Plug-in board plate appears. Two Plug-in boards can be accommodated: PLG1 at the right and PLG2 at the left.

IMPORTANT **Available slot (PLG1, PLG2) differs depending on the type of the Plug-in boards. See 177 for more information.**



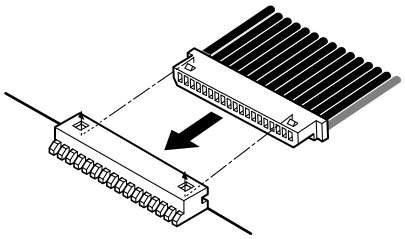
⚠ **When installing the optional Plug-in board (from when you remove the cover to when the cover is replaced securely) all operations must be done with the AC power cord disconnected.**

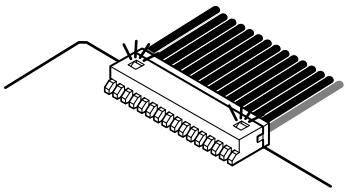
4. Remove the tape which is used to fasten the cable to the plate.



❺ Take out the Plug-in board from the anti-static bag. When installing the board, the side with a connector and ICs must be on top.

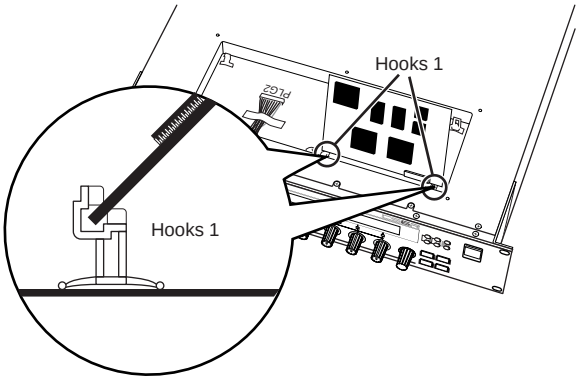
❻ Carefully plug the cable connector into the Plug-in board connector until the two notches on the cable connector lock into the sockets on the board as shown in the illustration.



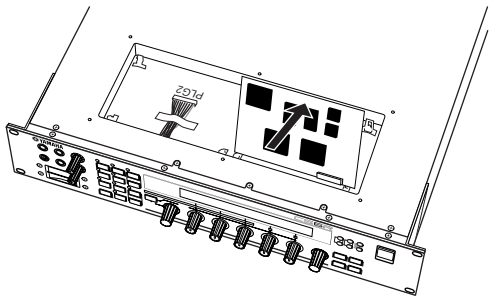


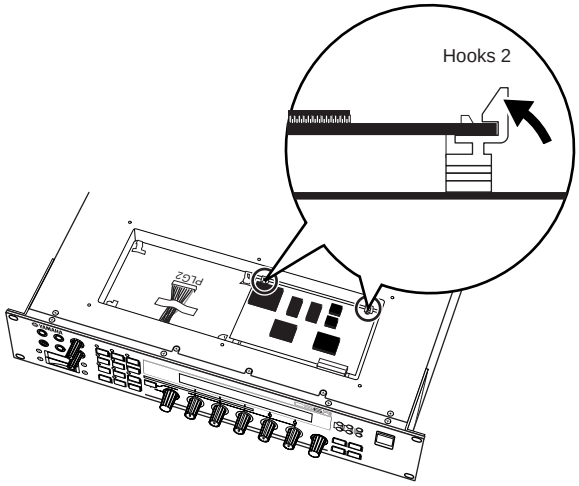
❼ Mount the Plug-in board onto the plate as detailed in the following steps.

❼-1 Insert one side of the Plug-in board (the connector side) into the hooks 1 as shown in the illustration.



❼-2 Press down the other side until it is securely settled on the hooks 2.

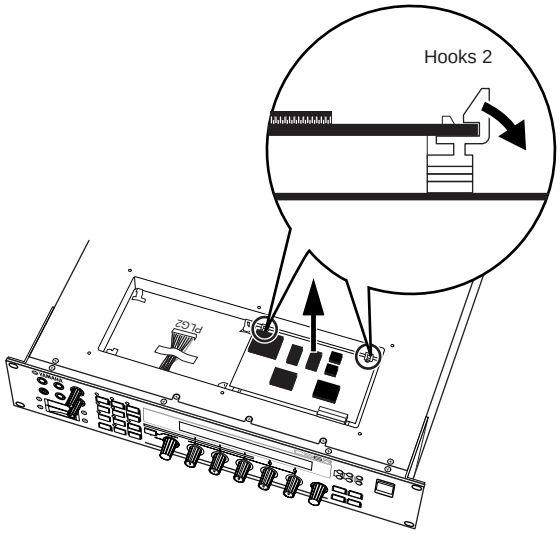




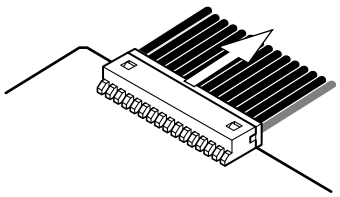
❽ Replace the Plug-in board cover by fastening the six flat-head screws you removed in the step ❷ above.

Removing the Plug-in board from the keyboard

❶ Press down the hooks 2 in the direction as shown in the illustration and take the board out from the hooks 2 by lifting up the one side.



❷ Pull out the other side of the board from the hooks 1.



❸ Pull out the cable connector from the Plug-in board connector.

Display Messages

Message	Meaning
<< ! MIDI buffer full. >>	Failed to process the MIDI data because too much data was received at once.
<< ! MIDI data error. >>	Error occurred when receiving MIDI data.
<< ! MIDI checksum error. >>	Error occurred when receiving bulk data.
<< ! Change internal battery. >>	Internal backup battery needs to be replaced.
<< ! Card full. >>	No more available memory on the Memory Card.
<< ! File not found. >>	Can't find the specified type of file.
<< ! Bad card. >>	Memory Card is faulty.
<< ! Card not ready. >>	Memory Card has not been inserted, or an incompatible card (5V type) has been inserted.
<< ! Card unformatted. >>	Memory Card has not been formatted.
<< ! Card write protected. >>	Memory Card is write protected.
<< ! Illegal card. >>	Memory Card has been wrongly formatted.
<< ! File already exists. >>	File with the same name already exists.
<< ! Data not exist. >>	There are no files containing Phrase Clip data.
<< ! Illegal file. >>	Data in the file is corrupted and cannot be used.
<< ! Illegal file name. >>	The specified file name is not in MS-DOS format.
<< ! Read only file. >>	File is a read-only type, and cannot be deleted, renamed or saved.
<< ! Can't make "EXT" file. >>	A file could not be created on the Memory Card.
<< ! Can't make directory. >>	No further directories can be created.
<< ! Too deep directory. >>	Directory cannot be entered because it is too deep.
<< ! Unknown file format. >>	File format is not recognized.
<< ! Bulk protected. >>	Bulk data cannot be received because protection is enabled.
<< ! Device number is off. >>	Bulk data cannot be transmitted/received because the device number is set to "off."
<< ! Device number mismatch. >>	Bulk data cannot be transmitted/received because the device numbers don't match.
<< ! Memory full. >>	All remaining memory has been used up.
<< ! Too many clips. >>	Maximum number of Phrase Clips has been reached and no more can be created.
<< ! Too short clip. >>	The Clip is too short to execute the "FreqConvert" Job.
<< ! Too low Fs clip. >>	Sampling Frequency of the Clip is too low to execute the "FreqConvert" Job.
<< ! Multi plugin in slot 1. >>	Cannot be used because Slot 1 contains a Multi-Part Plug-in Board.
<< ! Effect plugin in slot 2. >>	Cannot be used because Slot 2 contains a Effect Plug-in Board.
<< ! Plugin1 communication error. >>	Plug-in Board in Slot 1 is not working properly.
<< ! Plugin2 communication error. >>	Plug-in Board in Slot 2 is not working properly.
<< ! Plugin1 type mismatch. >>	Sound requires a different Plug-in Board to that inserted in Slot 1.
<< ! Plugin2 type mismatch. >>	Sound requires a different Plug-in Board to that inserted in Slot 2.
<< ! PLG100 not supported. >>	When used with a PLG100 series Plug-in Board, a data file of which File Type is "plugin" cannot be stored on a Memory Card.
<< ! Illegal data. >>	Format of the sample file or sample dump data is unsupported.
<< Executing... >>	Operation is being executed.
<< Now working... >>	Memory Card operation is being executed.
<< Now loading... >>	File is being loaded from Memory Card.
<< Now saving... >>	File is being saved to Memory Card.
<< Now checking plug-in board. >>	Plug-in Board(s) is/are being checked (after powering up the synthesizer).
<< Now recording... >>	Phrase Clip is being recorded.
<< Waiting for trigger... >>	Waiting for input signal to reach the trigger level to start recording a Phrase Clip.
<< Recording stopped. (No free mem.) >>	Recording has automatically stopped because no more free memory was available.
<< Sample dump receiving... >>	The instrument is receiving sample dump data via MIDI In.
<< MIDI bulk receiving... >>	MIDI Bulk data is being received.
<< MIDI bulk transmitting... >>	MIDI Bulk data is being transmitted.
<< Scene stored. >>	Scene has been stored. (The sound itself is not stored.)
<< C 3:128[ ] Stored. >>	Sound has been stored.
<< Completed. >>	Operation has completed.
<< Retry? [YES]/[NO] >>	Repeat the operation?
<< Make file ? [YES]/[NO] >>	Create a file?
<< Are you sure ? [YES]/[NO] >>	Final confirmation.
<< Overwrite? [YES]/[NO] >>	There is a file already stored with the same name. Replace it with a newer one with that name?

Troubleshooting

The following table provides troubleshooting hints and page references for some common problems. Most problems may be simply the result of incorrect settings. Before calling for professional service, refer to the troubleshooting advice below to see if you can find and correct the cause of the problem.

No sound.

- Is the volume set appropriately? (Pages 6 and 20)
- With the CS6x, if a Foot Controller has been connected to the FOOT VOLUME jack, has it been fully depressed? (Page 18)
- Is the Vol (volume) parameter of the QED Level screen of Voice Edit Common sufficiently high? (Page 81)
- Has the WaveNumber parameter of the OSC Wave screen of Voice Edit Element been set to 000 (off)? (Page 89)
- Is the Level parameter of the OSC Out screen in Voice Edit Element sufficiently high? (Page 89)
- Have the note range/velocity (note) range of the ZONE, OSC screen in Voice Edit been set appropriately? (Page 90)
- Are any of the Elements muted? (Page 61)
- Have the Element filters been set to cut almost all the sound? (Page 93)
- Have the effects parameters been set appropriately? (Pages 81, 88, 89, 127, 130, 151)
- Have the MIDI receive channels been set correctly? (Pages 133 and 166)
- Has the audio equipment been connected correctly? (Page 13)
- Has the Local switch been set to OFF? (Page 166)
- Have the Velocity Sensitivity, Note Limit and Velocity Limit parameters been set appropriately? (Pages 90, 112, 133 and 138)
- When playing back a song using the internal sequencer or an external MIDI device, have the volume and expression parameters been set appropriately?
- When playing performances using the internal sequencer or an external MIDI device, have the transmit channels for each sequencer track and the receive channels for each Part in the Performance, been set correctly? (Page 133)
- For Performances, is the volume of each Part sufficiently high? (Page 130)
- For Performances, has the output for each Part been set correctly? (Page 133)
- Is the selected Phrase Clip empty? (Page 142)
- Have you selected EXT Memory without having inserted a Memory Card? (Page 28)
- Has the [ATTACK] knob been turned fully clockwise (resulting in a very slow attack)?
- Has the [CUTOFF] knob been turned fully anti-clockwise (resulting in a very low cutoff frequency)?
- With the Arpeggiator enabled, has the Arpeggio Category parameter been set to “Ct” and the Key Mode parameter set to something other than “direct”? (Page 82)

There is no arpeggiator sound.

- Has the Arpeggiator’s note range been set appropriately? (Page 83)
- In Performance Mode, have the Layer Switch and Arpeggio Switch parameters for the Part(s) been set to ON? (Page 133)
- Has the Tempo parameter in the ARP Type screen been set to “MIDI,” despite no MIDI clock signals being received?

Arpeggiator settings (On/Off, Hold, Tempo) cannot be changed.

- Plug-in Boards feature their own built-in arpeggio pattern generators. Details are given on Page 170, and also in the Owner’s Manual that comes with each Plug-in Board. (For the PLG150-AN Plug-in Board the settings are found in the Arp/SEQ Sw screen. Details are given on Page 29 of the PLG150-AN Owner’s Manual.)

Sounds are distorted sounds.

- Have the effects been set appropriately? (Pages 81, 88, 89, 127, 130, 151)
- Has the volume been set too high? (Pages 6 and 20)
- Has the GAIN knob of the A/D INPUT been turned up too high? (Page 11)

Sound is very quiet.

- Has the MIDI volume or MIDI expression been set too low?
- Has the filter cutoff frequency been set too high/low? (Pages 40, 82, 106, 125, 130, 148, 152)

The pitch is wrong.

- Have the NoteShift and Tune parameters in the MSTR TG screen of Utility Mode been set correctly? (Page 163)
- Have the Oct and Trnspose parameters in the MSTR Kbd screen of Utility Mode been set appropriately? (Page 163)
- Have the pitch related parameters in PITCH menu (Voice Edit) been set appropriately? (Page 90)
- Has the Micro Tuning parameter in Voice Edit Mode been set to an unconventional scale? (Page 81)
- Has the Pitch Modulation Depth in the LFO screen (Voice Edit Mode) been set too high? (Page 101)
- For Performances, has the Note Shift parameter in the LYR (Layer) screen been set to a value other than 0? (Page 133)
- For Performances, has the Detune parameter for each Part been set to a value other than 0? (Page 133)

Sound is choppy and intermittent.

- Has the maximum polyphony been exceeded? (Page 33)

Only one note sounds at a time.

- Has the Mode parameter in the GEN Other screen of Voice Edit Common been set to "mono"? (Page 81)
- In Performance Mode, has the Mode parameter in the LYR Mode screen been set to "mono" for each Part? (Page 132)

No effects are applied.

- Has the [EF BYPASS] key been set to OFF? (Page 66)
- Has the Insertion Effect Element Switch parameter in the EFF screen of Voice Edit been set to ON? Also in this Mode, has the effect type been set to something other than "thru" or "off"? (Page 88)
- For Performances, have the Insertion Effect Parts been specified? (Page 127)
- For Reverb and Chorus, have the effect types in the Common Edit screens been set to ON? (Pages 89, 128)
- If an Effect Plug-in Board has been installed, has the PLG-EF parameter in the EFF Part screen of the Performance been set to something other than OFF? (Page 127)
- If an Effect Plug-in Board has been installed, has the setting in the EFF Plg screen of the Performance been set to something other than "THRU"?
- Have the [REVERB] and [CHORUS] been turned fully anti-clockwise? (Page 128)

The Element switches do not work for the Control Set

- Have Element-specific parameters been selected as Dest (Destination)? (Page 85)

The Plug-in Board does not work.

- Has the Effect Plug-in Board been installed in PLG2? (Page 177)
- Has the Multi-Part-type Plug-in Board been installed in PLG1? (Page 177)
- If an Effect Plug-in Board has been installed, has the PLG-EF parameter in the EFF Part screen of the Performance's Common Effect been set to something other than "off"? (Page 128)
- If an Effect Plug-in Board has been installed, has the setting in the EFF Plg screen of the Performance's Common Effect been set to something other than "THRU"? (Page 128)

Cannot find the Drum Voice.

- Drum Voices are selected differently to Normal Voices (Page 76).

Cannot enter small values.

- Have you only tried entering values using Assignable Knobs [A] to [C] or Knob [1]/[2]? (Page 24)

Cannot move the cursor without the settings being affected.

- Hold down the [SHIFT] key while using Knobs [A] to [C], Knob [1]/[2], and the [DATA] knob or the [INC/YES] and [DEC/NO] keys (Page 24).

Cannot receive bulk data.

- When using the CS6x/CS6R Voice Editor, have you set a sufficient Dump Interval? The Dump Interval in the Voice Editor Setup dialog must be set to 10ms or greater.

Macintosh users: Card Filer for Macintosh does not work correctly.

- Are you using MIDI Time Piece?
  Card Filer is not compatible with MIDI Time Piece. You need to disable the use of MIDI Time Piece on the Macintosh.

Specifications

		CS6x	CS6R
KEYBOARD	Number of Keys	61	—
	Touch	Initial touch, Aftertouch	—
TONE GENERATION SYSTEM	Tone Generators	AWM2, Phrase Clip, Modular Synthesis Plug-in System	
	Polyphony	64	
VOICE	Number of Voice	Normal voices (256 Presets, 128 Internals [Users], 128 Externals [Memory Cards]), Drum voices (8 presets, 2 Internals [Users], 2 Externals [Memory Cards]), Plug-in voices (64 x 2 Plug-in Boards [If installed])	
	Wave ROM	16 MByte	
PERFORMANCE	Multi-Timbres	20 (16 Voice Parts, Phrase Clip Part, A/D Input Part, Plug-in 1/2 Parts)	
	Number of Performance	128 Internals, 64 Externals	
	Master Keyboard Mode	4 Zones	
PHRASE CLIP	Number of Clip	256 (Max)	
	Number of Clip Kits	4 (73 Keys [C0-C6] x 4 Kits)	
	Sampling	16 bits linear, 44.1 kHz	
	Memory	4 Mbyte (DRAM)	
EFFECT	Reverb	12	
	Chorus	23	
	Insertion	24 (Insertion 1), 92 (Insertion 2), 24 (Insertion for Plug-in Voices)	
SCENE		Scene 1/2, Scene Control, Scene Store	—
SEQUENCE PLAY	Format	SMF Format 0 (Direct Play only), Sequence Chain (Load/Save)	
	Number of Sequence Chains	100 Steps (100 Songs)	
ARPEGGIATOR	Number of Arpebbios	128	
Card	File Type	All Data, All Voice Data, All Phrase Clip Data, Plug-in, Sequence Chain, SMF, WAV, AIFF	
	Functions	Save, Load, Rename, Delete, Make Directory, Format	
CONTROLS		Volume Knob, Octave Up/Down (CS6x), Pitch (CS6x), Modulation (CS6x), Ribbon Controller (CS6x), Scene 1, 2 (CS6x), Scene Control (CS6x), 2 Filter Knobs (CS6x), 2 Effect Knobs (CS6x), 4 EG Knobs (CS6x), Pan Knob (CS6x), Portamento ON/OFF (CS6x), Arpeggio Gate Time (CS6x), Arpeggio Hold (CS6x), Arpeggio ON/OFF (CS6x), Phrase Clip Pitch (CS6x), Phrase Clip, Phrase Clip Rec, Tempo (CS6x), Sequence Play, Sequence PLAY/STOP, Shift, Page, Knob A/B/C/1/2, Data, Effect Bypass, Master Keyboard (CS6x), Exit, Enter Dec/No, Inc/Yes, 7 Mode Keys, 6 Memory Keys, 8 Bank Keys (CS6x), 16 Program/Part Keys (CS6x), Power, Card Slot, Gain, Host Select	
CONNECTORS & TERMINALS		MIDI In, Out, Thru, To Host, Breath, Footswitch (CS6x), Sustain (CS6x), Foot Controller (CS6x), Foot Volume (CS6x), Individual Output 1, 2, Output L/Mono R, Phones, A/D Input (LINE 1, MIC/LINE 2), AC Inlet, 2 Connectors for Plug-in Boards	
DISPLAY		40 x 2 (Backlit)	
INCLUDED ACCESSORIES		Owner's Manual, Data List , Memory Card, CD-ROM, AC Power Cord	
OPTIONAL ACCESSORIES		PLG150 Plug-in Boards Series, PLG100 Plug-in Boards Series, FC4/5 Footswitch, FC7 Foot Controller, BC3 Breath Controller	
POWER CONSUMPTION		16watts	
OUTPUT IMPEDANCE		Output: +18.1 ±2dbm (10k ohms), Phones: +17.2 ±2dbm (33 ohms)	
DIMENSIONS		1019(W) x 357(D) x 109(H) mm	480(W) x 366(D) x 88(H) mm
WEIGHT		11.6 kg	6.0 kg

* Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

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MEMO

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11 Ubi Road #06-00, Meiban Industrial Building, Singapore
Tel: 65-747-4374

TAIWAN
Yamaha KHS Music Co., Ltd.
10F, 150, Tun-Hwa Northroad,
Taipei, Taiwan, R.O.C.
Tel: 02-2713-8999

THAILAND
Siam Music Yamaha Co., Ltd.
121/60-61 RS Tower 17th Floor,
Ratchadaphisek RD., Dindaeng,
Bangkok 10320, Thailand
Tel: 02-641-2951

THE PEOPLE'S REPUBLIC OF CHINA AND OTHER ASIAN COUNTRIES
Yamaha Corporation,
International Marketing Division
Nakazawa-cho 10-1, Hamamatsu, Japan 430-8650
Tel: 053-460-2317

OCEANIA

AUSTRALIA
Yamaha Music Australia Pty. Ltd.
17-33 Market Street, South Melbourne, Vic. 3205, Australia
Tel: 3-699-2388

NEW ZEALAND
Music Houses of N.Z. Ltd.
146/148 Captain Springs Road, Te Papapa, Auckland, New Zealand
Tel: 9-634-0099

COUNTRIES AND TRUST TERRITORIES IN PACIFIC OCEAN
Yamaha Corporation,
International Marketing Group
Nakazawa-cho 10-1, Hamamatsu, Japan 430-8650
Tel: 053-460-2312

HEAD OFFICE **Yamaha Corporation, Electronic Musical Instrument Division**
Nakazawa-cho 10-1, Hamamatsu, Japan 430-8650
Tel: 053-460-2445

IMPORTANT SAFETY INSTRUCTIONS

INFORMATION RELATING TO PERSONAL INJURY, ELECTRICAL SHOCK, AND FIRE HAZARD POSSIBILITIES HAS BEEN INCLUDED IN THIS LIST.

WARNING- When using any electrical or electronic product, basic precautions should always be followed. These precautions include, but are not limited to, the following:

1. Read all Safety Instructions, Installation Instructions, Special Message Section items, and any Assembly Instructions found in this manual BEFORE making any connections, including connection to the main supply.

2. Do not attempt to service this product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

3. Main Power Supply Verification: Yamaha products are manufactured specifically for the supply voltage in the area where they are to be sold. If you should move, or if any doubt exists about the supply voltage in your area, please contact your dealer for supply voltage verification and (if applicable) instructions. The required supply voltage is printed on the name plate. For name plate location, please refer to the graphic found in the Special Message Section of this manual.

4. DANGER-Grounding Instructions: This product must be grounded and therefore has been equipped with a three pin attachment plug. If this product should malfunction, the ground pin provides a path of low resistance for electrical current, reducing the risk of electrical shock. If your wall socket will not accommodate this type plug, contact an electrician to have the outlet replaced in accordance with local electrical codes. Do NOT modify the plug or change the plug to a different type!

5. WARNING: Do not place this product or any other objects on the power cord or place it in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, the minimum wire size for a 25' cord (or less) is 18 AWG. NOTE: The smaller the AWG number, the larger the current handling capacity. For longer extension cords, consult a local electrician.

6. Ventilation: Electronic products, unless specifically designed for enclosed installations, should be placed in locations that do not interfere with proper ventilation. If instructions for enclosed installations are not provided, it must be assumed that unobstructed ventilation is required.

7. Temperature considerations: Electronic products should be installed in locations that do not seriously contribute to their operating temperature. Placement of this product close to heat sources such as; radiators, heat registers etc., should be avoided.

8. This product was NOT designed for use in wet/damp locations and should not be used near water or exposed to rain. Examples of wet /damp locations are; near a swimming pool, spa, tub, sink, or wet basement.

9. This product should be used only with the components supplied or; a cart ,rack, or stand that is recommended by the manufacturer. If a cart, rack, or stand is used, please observe all safety markings and instructions that accompany the accessory product.

10. The power supply cord (plug) should be disconnected from the outlet when electronic products are to be left unused for extended periods of time. Cords should also be disconnected when there is a high probability of lightning and/or electrical storm activity.

11. Care should be taken that objects do not fall and liquids are not spilled into the enclosure through any openings that may exist.

12. Electrical/electronic products should be serviced by a qualified service person when:

a. The power supply cord has been damaged; or
b. Objects have fallen, been inserted, or liquids have been spilled into the enclosure through openings; or
c. The product has been exposed to rain; or
d. The product does not operate, exhibits a marked change in performance; or
e. The product has been dropped, or the enclosure of the product has been damaged.

13. This product, either alone or in combination with an amplifier and headphones or speaker/s, may be capable of producing sound levels that could cause permanent hearing loss. DO NOT operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

IMPORTANT: The louder the sound, the shorter the time period before damage occurs.

14. Some Yamaha products may have benches and/or accessory mounting fixtures that are either supplied as a part of the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that benches are stable and any optional fixtures (where applicable) are well secured BEFORE using. Benches supplied by Yamaha are designed for seating only. No other uses are recommended.

PLEASE KEEP THIS MANUAL

FCC INFORMATION (U.S.A.)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

   Relocate either this product or the device that is being affected by the interference.

   Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

   In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

   If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA90620

   The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

(class B)

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	:EARTH
BLUE	:NEUTRAL
BROWN	:LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or colored GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

* This applies only to products distributed by Yamaha-Kemble Music (U.K.) Ltd.

(3 wires)

NEDERLAND / THE NETHERLANDS

- Dit apparaat bevat een lithium batterij voor geheugen back-up.
- This apparatus contains a lithium battery for memory back-up.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat ann het einde van de levensduur afdankt of de volgende Yamaha Service Afdeiing:

  Yamaha Music Nederland Service Afdeiing

  Kanaalweg 18-G, 3526 KL UTRECHT

  Tel. 030-2828425
- For the removal of the battery at the moment of the disposal at the end of the service life please consult your retailer or Yamaha Service Center as follows:

  Yamaha Music Nederland Service Center

  Address : Kanaalweg 18-G, 3526 KL UTRECHT

  Tel : 030-2828425
- Gooi de batterij niet weg, maar lever hem in als KCA.
- Do not throw away the battery. Instead, hand it in as small chemical waste.

(lithium disposal)

ADVARSEL!
Lithiumbatteri—Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandoren.

VARNING
Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enlight fabrikantens instruktion.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

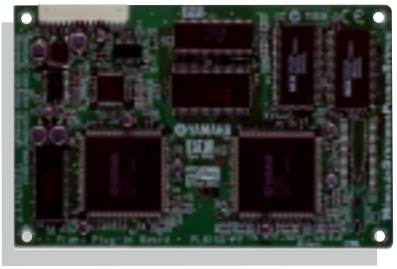
(lithium caution)

Modular Synthesis Plug-in System

Analog Physical Modeling Plug-in Board **PLG150 AN**

Reproduce the fat and funky sounds of vintage analog synths! This board gives you a synth engine similar to the one featured in Yamaha's amazing AN1x Analog Physical Modeling Synthesizer. On top of its full array of wave algorithms, resonant filters, LFOs, and envelope generators, it also has distortion and a 3-band equalizer. With the PLG150-AN, project and professional studios alike will be able to produce the killer synth sounds featured in today's hot dance tracks.

Tone Generator Type	AN (Analog Physical Modeling Synthesis)
Polyphony	5 notes
Voices	256 Preset 128 User
Effects	Guitar Amp. Simulator (Distortion), 3-Band EQ, XG Part EQ
Interface	Plug-in Connector (15-pin digital I/F connector)
Accessories	FD (AN Easy Editor, AN Expert Editor, Demonstration Songs, Plug-in Voice Data for the CS6x/CS6R/S80, Performance Data for the MU128)
Dimensions (W) x (D) x (H)	138.5 x 89.0 x 8.5 mm (5 9/16" x 3 5/8" x 3/8")
Weight	65 g (2.3 oz)



Piano Plug-in Board **PLG150 PF**

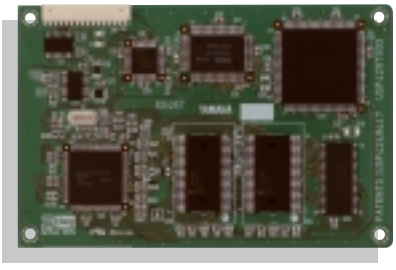
For the serious piano player, this Plug-in Board is loaded with hundreds of painstakingly sampled piano and keyboard voices—from concert grands and uprights to electric pianos and harpsichords. Two piano boards can be used together, effectively doubling piano polyphony to an incredible 128 notes!

Tone Generator Type	AWM2
Polyphony	64 notes
Voices	136 Preset
Effects	Reverb, Chorus, Insertion, 2-Band EQ
Interface	Plug-in Connector (15-pin digital I/F connector)
Accessories	FD (PF Easy Editor, Demonstration Songs, Plug-in Voice Data for the CS6x/CS6R/S80)
Dimensions (W) x (D) x (H)	138.5 x 89.0 x 8.5 mm (5 9/16" x 3 5/8" x 3/8")
Weight	72 g (2.5 oz)

Virtual Acoustic VL Plug-in Board **PLG150 VL**

The Virtual Acoustic Modular Synthesis Plug-in Board lets you create incredibly expressive, natural-sounding voices by digitally simulating the physical characteristics of acoustic instruments. Thanks to its fabulous synthesis architecture, extensive realtime performance control of the voices is possible, making it the ideal Plug-in Board for keyboard soloists.

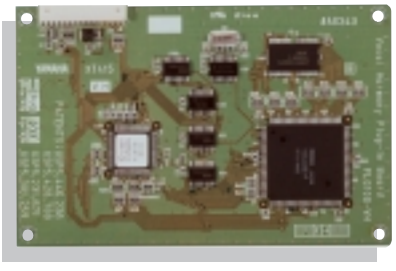
Tone Generator Type	S/VA (Self-oscillating Virtual Acoustic Synthesis)
Polyphony	1 note monophonic
Voices	256 Preset 70 User
Interface	Plug-in Connector (15-pin digital I/F connector)
Accessories	CD-ROM (VL Visual Editor), FD (Demonstration Songs, Plug-in Voice Data for the CS6x/CS6R/S80, Performance Data for the MU128)
Dimensions (W) x (D) x (H)	138.5 x 89.0 x 8.5 mm (5 9/16" x 3 5/8" x 3/8")
Weight	56 g (2.0 oz)



Advanced DX/TX Plug-in Board **PLG150 DX**

Add the classic sounds of Yamaha's world-famous DX-7 synthesizer to the CS6x/6R. The PLG150-DX features the same 6-operator 16-note polyphonic FM tone generation system that took the synthesizer industry by storm. This board is a must-have for performing keyboard players and producers of contemporary music.

Tone Generator Type	FM Synthesis
Polyphony	16 notes
Voices	912 Preset 64 User
Effects	Part EQ, Lowpass, Highpass
Interface	Plug-in Connector (15-pin digital I/F connector)
Accessories	CD-ROM (DX Easy Editor, DX Simulator), FD (Demonstration Songs, Plug-in Voice Data for the CS6x/CS6R/S80, Performance Data for the MU128)
Dimensions (W) x (D) x (H)	138.5 x 89.0 x 8.5 mm (5 9/16" x 3 5/8" x 3/8")
Weight	63 g (2.2 oz)



Vocal Harmony Plug-in Board **PLG100 VH**

The PLG100-VH adds powerful harmony or vocoder effects to your voice by simply plugging a microphone into the CS6x/6R's A/D input and playing chords on the keyboard. Harmony interval changes can be recorded in a sequencer track for automated playback—a dream tool for performing vocalists or for singer/songwriters who want to compose and record songs at home.

Maximum Harmony	3 voices
Effects	Vocoder Harmony, Detune Harmony Chordal Harmony, Chromatic Harmony
Voice Control	Gender change (male → female, female → male) Vibrato, Volume, Pan, Detune
Interface	Plug-in Connector (15-pin digital I/F connector)
Dimensions (W) x (D) x (H)	138.5 x 89.0 x 8.5 mm (5 9/16" x 3 5/8" x 3/8")
Weight	53 g (1.9 oz)

XG Plug-in Board **PLG100 XG**

This Plug-in Board gives you over 400 professional-quality sampled voices and 12 drum kits as well as 32 additional notes of polyphony. Plus it fully supports XG MIDI specifications, so you can use it to play back XG SMF MIDI song files from an external sequencer or the CS6x/6R's internal sequencer. Home recording hobbyists in particular will find this Plug-in Board an indispensable addition to the CS6x/6R.

Tone Generator Type	AWM2
Polyphony	32 notes
Voices	480 Preset + 12 Drum Kits
Effects	Reverb, Chorus, Variation
Connector	Plug-in Connector (15-pin digital I/F connector)
Accessories	CD-ROM (XGworks lite V3.0, XG Editor for Mac), FD (Demonstration Songs)
Dimensions (W) x (D) x (H)	138.5 x 89.0 x 8.5 mm (5 9/16" x 3 5/8" x 3/8")
Weight	56 g (2.0 oz)

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